Digital inclusion network building: a network weaving analysis

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Abstract

This paper aims to investigate digital inclusion network building as a mechanism for reducing digital poverty. Analysing a rural digital inclusion network in the UK, and drawing on Network Weaving Theory (Holley, 2013), this case study analyses how people's roles and places play a big part in both the construction and growth of the network, as well as in the advancements of its initiatives. The contribution of this study is significant. Theoretically, this research builds on the literature on contextual conditions to digital access and adoption and proposes a novel theoretical framework to unpack the complexity of digital inclusion network building - based on Holley's theory. Results will inform UK regional organisations' practices for establishing effective digital inclusion networks in post-pandemic, 'digital by default', and cost of living crisis times in the country. It will also provide recommendations for national policies to strengthen the resilience and sustainability of digital inclusion provision.

Keywords: digital inclusion, network building, network weaving, digital poverty

1.0 Introduction

Efforts to reduce digital poverty through digital inclusion have long preoccupied scholars and policymakers, but the task of implementing workable digital inclusion initiatives is complex due to a multitude of factors which contribute to digital exclusion (Wagg and Simeonova, 2022). Arguably this complexity has been exacerbated as a consequence of the Covid-19 pandemic and the consequent dramatic movement to 'online only' products and services in the UK. This almost overnight movement further exposed digital poverty inequities and the vulnerabilities created through the 'digital by default' culture. We now have the opportunity to revisit how digital inclusion is being delivered in the community with a transformative perspective for social change.

During the pandemic, a myriad of emergency digital inclusion initiatives were spurred into action in the country, some with more positive results than others. Communities and organisations came together as they sought innovative solutions to reduce digital poverty (Holmes and Burgess, 2022), highlighting also how much communities were struggling in this sense. Specific solutions gaining attention - and the focus of this paper - include the recent growth of digital inclusion network building. Here, we are not talking about technological digital infrastructure networks such as fibre, broadband or mobile. Our focus is on networks of organisations that provide social and community support through digital inclusion activities. For many of these organisations, digital inclusion is one of many activities they perform.

Network building has grabbed the attention of funding bodies and civil societies, who recognise the need to find new ways to look at problems which have not been solved via solutions such as better infrastructure or more skills-based training. These organisations are now sponsoring the creation of mechanisms to support networks of local government authorities, community partners and organisations from the voluntary, community and social enterprise (VCSE) sector that are addressing digital inequality (The British Academy, 2023).

Indeed, despite the UK being widely considered as a well-connected country with a robust digital economy, several intractable digital divides have persisted over many years that exclude a proportion of society. Scholars argue such digital divides have been exacerbated by the drive to digitise government services and press forward with a 'digital-by-default' agenda and the closure of face-to-face services (Holmes and Burgess, 2022). As a result, the last decade has witnessed a shift from digital being a 'nice to have' to a 'necessity' as more and more products and services are now only accessible online. This shift some would argue has led to the creation of an era of 'compulsory computing' (Allmann and Blank, 2021) or 'digital enforcement' (Dıaz Andrade and Techatassanasoontorn, 2021), where everyone is expected to not only have access to digital technologies, but also have the confidence and know-how of using ICTs for delicate needs such as applying for welfare benefits, online banking, or discussing health-related issues.

Those particularly affected are often people experiencing different levels of marginalisation, as they are more likely to experience 'digital poverty' and interact with and use the online world fully (Allmann, 2022). Scholars argue that digital inclusion policies continue to struggle to address significant inequality issues (Diaz Andrade and Techatassanasoontorn, 2021). They also highlight a scarcity of literature exploring digital inclusion through a theoretical lens (Wagg and Simeonova, 2022; Al-Muwil et al., 2019).

In this paper, we argue the use of theory is fruitful in guiding digital inclusion research and recommend the use of Network Weaving (Holley, 2013) as a theoretical framework to understand the complexity of digital inclusion network building and to explore its potential to complement and advance existing understanding of digital inclusion practices. We aim to gain a better understanding of digital inclusion network building as a mechanism for reducing digital poverty, and posit the following research questions: How do people's roles and places play a big part in the construction and growth of a digital inclusion network? How does this reflect in the advancements of its initiatives? How can the Network Weaving theoretical framework help us unpack the complexity of digital inclusion network building?

The contributions of this paper include: i) new insights into the understanding of digital inclusion network building; ii) builds on the literature on contextual conditions to digital access and adoption; and iii) proposes a theoretical framework to unpack the complexity of digital inclusion network building using Network Weaving

2.0 Literature review

2.1 The issue with 'digital-by-default' policies

Existing studies on digital inclusion/exclusion have highlighted the need to better understand whether and to what extent local networks and place-based approaches can address inequities in terms of digitalising core aspects of our everyday lives (e.g., Smith et al. 2010; Park et al, 2019). Policies and agendas that have been prioritising 'digital-by-default' (often also referred to as 'digital first'), such as the ones recently adopted in the UK, have resulted in more and more products and services being

delivered primarily and often exclusively in digital forms. Often, such policies are framed as being progressive, more efficient, and more productive (Schou and Hjelholt, 2018).

However, experience shows that, despite digital technologies becoming more ubiquitous, their access and usability remain unequal and problematic. The root cause for this most of the time is a combination of other inequalities that compound each other, further exacerbating the negative impacts of accelerated digitalisation among the most vulnerable. For example, while there are numerous affordable devices (e.g., low-cost smartphones), the increasing cost of living poses significant challenges as to who can go and remain online (Nathanial-Ayodele and McGrath, 2023). Equally, however, even for those households that may be financially better off, other factors might come into play, including living in less-resourced areas. Indeed, geography plays a crucial role as where one lives influences whether one can connect via broadband or mobile connectivity. In more detail, rural and remote, hard-to-reach areas are often characterised by little to no broadband infrastructure (Valentin-Sivico et al, 2022; Philip and Williams, 2019; Wagg and Simeonova, 2022).

Further, the COVID-19 pandemic and its implications have deepened and accentuated structural inequalities. During and after the pandemic, digitally-enabled solutions to deliver services to confront and overcome the pandemic have accelerated, e.g., the NHS COVID-19 contact tracing app (Eom and Lee, 2022) and similar solutions. Yet, despite that such initiatives allowed for business continuity (Zamani et al., 2022), their wide adoption exacerbated digital inequalities, and further drew attention to the fact that a lot more people and communities can be digitally excluded in more complex ways than what conceptualised by previous simplistic notions and divisions of 'haves' and have nots' (Zheng and Walsham, 2021).

2.2 Digital Poverty

The complexity of digital poverty is influenced by a multitude of factors. Zamani and Vannini (2022) suggest that digital poverty arises from a combination of deprivations in areas such as education, employment, and health, as well as disparities in access to broadband infrastructure and various demographic characteristics. This complexity

extends beyond simple binary divisions, like gender or age, and instead encompasses a spectrum of characteristics.

These intricate factors, combined with the tendency for digital inclusion projects to receive short-term funding, present a formidable challenge for policymakers when it comes to implementing effective digital inclusion initiatives (Bach et al., 2013). Short-term projects often falter because they fail to empower the community and don't allow for the cultivation of a necessary digital culture within the community, let alone considering the scalability of such initiatives (Hemerling et al., 2018).

The persistence of digital poverty in the UK has led to a recent policy focus through evidence-based reviews by the Digital Poverty Alliance (Allmann, 2022) and The British Academy (2022). These reviews, and other research during and post the pandemic, brought to light the socio-economic implications of digital poverty (Deloitte, 2023) and the increasing issue of 'data poverty' defined by Lucas et al. (2020) as "those individuals, households or communities who cannot afford sufficient, private and secure mobile or broadband data to meet their essential needs".

Other attention has been drawn to the need to move away from existing policy measures of digital exclusion based on access to or use of internet services to establish a benchmark for a minimum digital standard of living (MDSL) for households that complements existing indices but also captures the real issues faced by society. This led to the development of the MDSL which "includes, but is more than, having accessible internet, adequate equipment, and the skills, knowledge and support people need. It is about being able to communicate, connect and engage with opportunities safely and with confidence" (Blackwell et al, 2023, p. 3).

2.3 Digital Inclusion Approaches

Digital inclusion initiatives historically have been dominated by the installation and provision of digital infrastructure and devices. However, approaches to digital inclusion also include a strong social aspect where efforts involve providing digital skills training and social support (Asmar et al., 2020). These social initiatives are carried out by a range of organisations, including public libraries, advisory centres, service providers, adult education institutions, housing associations, learning centres, and, at times, financial institutions, and telecommunications companies (Al-Muwil et

al., 2019; Reisdorf and Rhinesmith, 2020). Digital inclusion initiatives have often relied upon what could be termed as community infrastructure organisations (Cook et al., 2023) or intermediary organisations (Wagg, 2021) reaching out, engaging and supporting digitally excluded individuals (Torrecillas et al., 2014). How such initiatives are delivered varies, from targeted approaches, targeting specific groups of individuals, to more community asset-based (or strength-based) approaches (Reisdorf and Rhinesmith, 2018). Scholars highlight how there has been an overreliance on such organisations which are often poorly funded and under-resourced (Wagg and Simeonova, 2022), following years of disinvestment and disenchantment in policy and practice, creating a fragmented landscape of provision of civil society infrastructure (Macmillan, 2021). But it is the hyperlocality and trusted nature that make such organisations crucial for digital inclusion initiatives.

Indeed, policymakers worldwide have recognized the importance of digital inclusion (Diaz Andrade and Techatassanasoontorn, 2021; Faith, Hernandez, and Beecher, 2022). In the UK, this commitment is evident through the government's Digital Inclusion strategy (Cabinet Office, 2014) and the proliferation of digital inclusion initiatives (Mervyn et al., 2014, Wagg, 2021). The number of initiatives surged during the pandemic to help tackle digital poverty. As well as focusing on access to technology and digital skills, these initiatives involved device gifting and donations, temporary removal of caps on broadband use, agreed between the Government and some internet providers, to allow individuals who could not afford to buy more data or wi-fi provision to continue to use the internet (Holmes and Burgess, 2022).

However, it's important to note that not all digital inclusion programmes have been successful (Madon et al., 2009; Helsper and Reisdorf, 2017; Davies et al., 2017). Despite calls for deeper insights into digital inclusion, existing literature primarily focuses on the perspective of a 'digital skills deficit,' with limited attention given to the contextual factors that influence it (Vannini et al., 2017; Lythreatis et al., 2022). Notable exceptions which take a more place-based perspective include Park et al., 2019; Reisdorf and Rhinesmith, 2020; and Guenther et al., 2020.

The 'deficit' perspective is also dominant in current policy initiatives, such as the 2022 UK Digital Strategy, which regards digital skills as central to the nation's growth, competitiveness, and long-term prosperity (UK Digital Strategy, 2022).

Considering however what we know about digital poverty, its underlying causes, and the far-reaching consequences it carries, the 'deficit' approach in both research and policy, raises questions about the effectiveness of current discussions on digital inclusion and the necessary changes to effectively support communities toward reducing inequalities.

2.4 Digital inclusion networks

Digital inclusion networks are not new. National networks in existence include the National Digital Inclusion Network (formerly the UK Online Centres Network) and the Digital Inclusion Network (operated by the National Digital Inclusion Alliance in the US). However, a recent emerging trend that seems to be driving new approaches to digital inclusion involves network building and mapping (Wagg, 2021; Mason et al., 2022).

Furthermore, as part of the broader effort to comprehend digital poverty, there is a growing inclination towards regional mapping exercises. These exercises aim to pinpoint areas where digital inclusion initiatives are needed, particularly in regions marked by multiple deprivation indicators, inadequate digital connectivity, and gaps in training provision. Projects that have undertaken such activities include the LOTI Digital Inclusion Innovation Programme, (LOTI, 2022) and the Greater Manchester Digital Skills map (GMCA, 2023). Similarly, the University of Sheffield carried out a mapping exercise to understand digital poverty in the South Yorkshire region (Zamani & Vannini, 2022).

It's worth noting that the utility of such mapping exercises is limited in the short term because the circumstances of communities and individuals can and often do change. Local digital inclusion provision may not always be accurately reflected, and most mapping efforts rely on datasets that capture conditions at a specific moment in time. Nevertheless, these exercises can be valuable tools for identifying areas with greater need and, consequently, for developing place-based interventions and supporting new approaches to digital inclusion provision.

Despite this drive towards digital inclusion network building and mapping and calls from scholars highlighting this need, digital inclusion networks remain an under-researched area (Wagg et al., 2024). This therefore provides an opportunity to

problematise and challenge taken-for-granted assumptions about existing digital inclusion provisions and reveal the complexity of building digital inclusion networks and principles that can be applied to other local contexts.

3.0 Network Weaving

Recognising the importance of theory to understand research, as well as the need for more theory in digital inclusion scholarship (Gomez & Pather, 2012; Gomez, 2013), we adopt Network Weaving (NW) as a theoretical framework to underline not only the importance of on the ground networks to address communities' digital inclusion needs, but also to understand how digital networks should be set up and work to meet their communities' needs.

As a theory, NW was developed by June Holley (2013) to assist low-income entrepreneurs in one of the most economically disadvantaged areas in the United States, and with the primary aim to facilitate the establishment of networks that would catalyse transformative change within these underserved communities.

Holley (2013) emphasises how a focus on networks enables societal transformations via rectifying disparities in power dynamics among people, communities, and institutions. Networks, in fact, function as the foundational support structure of social systems, ensuring their stability. Therefore, exposing and understanding the networks that maintain the status quo is essential to disrupting it and achieving systemic change. This focus enables people and communities to deliberately nurture new networks, focusing on people experiencing patterns of marginalisation, and dispersing power. According to NW, facilitating transformational change involves repositioning oneself within networks and nurturing grassroots ones.

Holley (ibid.) proposes that NW can help these transformations by deliberately fostering relationships among peers who acknowledge and appreciate the respective contributions, and by regarding each individual as a potential leader, capable of forging connections and instigating collaborative endeavours. The consequent redistribution of power among the members of the network, as well as the involvement of all stakeholders' perspectives, are emphasised.

Holley theorises distinct and coexisting types of networks and centres her focus on their roles, as well as on the roles of the people involved. Network Weavers can assume four different roles, prioritise the development of the network (Connector Catalyst and Guardian), or take action (Self-organised Project Coordinator and Facilitator). Additionally, primarily functioning at the micro- (Connector Catalyst and Project Coordinator), or at the macro-level (Network Guardian and Facilitator). Their responsibilities encompass enhancing the overall systems of networks or aiding individuals in recognising the advantages associated with a network-oriented approach. What's common is how, in NW, leadership is characterised by its distributed nature, wherein every individual has the potential to assume a leadership role and leadership skills do not need to be innate but can be developed. The innate capacity of networks to self-organise is seen as a catalyst for proactive engagement that fosters a sense of ownership and active participation. Holley's emphasis here is also on the support needed for network leaders to succeed (ibid). Less attention is posed in the theory to the role that places and spaces can play in NW.

We recognise that the lens of NW, although little used in Information Systems, can lead to fruitful conversations in the field (see also: Marais & Vannini, 2021). Analysing digital inclusion networks through NW introduces a novel perspective to research in the field, and it helps us place a strong emphasis on the dynamic roles of individuals, recognising their distributed nature, and appreciating the unique strengths that each person brings to the table. This perspective underscores the importance of committing to support as a cornerstone for both individual and network growth, fostering a culture of "supporting the supporters". Furthermore, through NW, the significance of relationships and the necessity of nurturing and caring for one another within the network is acknowledged, emphasising community-building and shifting the conventional focus of digital inclusion from a mere infrastructure and skills problem to a holistic, community-centred place-based approach. Finally, NW explores the concept of redistributing access to power through people. It advocates for the necessity of contextual and co-created solutions, recognizing that change doesn't always equate to uniform accessibility. In doing so, it paves the way for a transformative approach to network dynamics that embraces diversity and inclusivity as its guiding principles. Elsewhere, NW has indeed been suggested as a transformational, feminist approach to social change (Marais & Vannini, 2021).

4.0 Methodology

This study adopted a case study approach guided by the following research questions:

1. How do people's roles and places play a big part in the construction and growth of a digital inclusion network?
2. How does this reflect in the advancements of its initiatives?
3. How can the Network Weaving theoretical framework help us unpack the complexity of digital inclusion network building?

This case study was selected specifically for its uniqueness rather than its potential for generalisability. As per case study methodology, individual cases can convey principles that, although not universally applicable, can be learned from, adapted, and applied in diverse contexts (Yin, 2009). This specific case, centred on a local digital inclusion network established to address digital poverty in a rural area of the UK, was therefore chosen due to its potential in offering valuable lessons on the issue of digital inclusion.

To refer to the network we analyse, we will use the pseudonym Dedicated Digital Inclusion Network (DDIN) and Rural Business & Community Foundation (RBCF) as the organisation that set it up. We conducted semi-structured interviews with DDIN network participants at multiple levels, using a combination of snowball sampling and purposeful sampling. We proceeded by advertising our study with the network within meetings and using the mailing list set up by the main network convenors. Interviews were conducted with individuals who volunteered initially, and additional participants were identified through recommendations from the initial interviewees. Subsequently, we monitored the number of interviews conducted with stakeholders at various network levels (as outlined below). To ensure comprehensive coverage, we sent targeted communication to organisations at the remaining levels requiring interviews, with continued coordination through the primary network convenor. Our aim was not to gather a similar amount of interviews per network level. Rather, we aimed to ensure the representation of as many different voices within the network. This is why interviewees at Level 3 constitute the highest number in the corpus. In total, we gathered 21 interviews with:

- Level 1 (L1) Key stakeholders managing the development of the DDIN network (2 interviewees);
- Level 2 (L2) Key stakeholders involved in the mapping exercise of digital poverty and digital inclusion activities in Derbyshire (1 interviewee);
- Level 3 (L3) Organisations who have joined the network and /or collaborate with the network (15 interviewees);
- Level 4 (L4) Individuals from organisations that have been involved in digital inclusion networks and mapping digital poverty/ inclusion activities in other locations in the UK (3 interviewees).

We also conducted a total of five non-intrusive observations (four were in-person, and one online): we did not participate nor interrupt the participants and activities being held during the observations (Creswell, 2014). We followed a semi-structured observational protocol, making written fieldnotes and including criteria such as: local infrastructure, layout of the place, description of activities, capturing the essence of the workplace, description of digital inclusion activities, and description of volunteers' or workers' duties. We also took reflexive notes after each observation. The activities observed differed: one involved a workplace, three involved digital training sessions, and one was an online steering group meeting.

The two data sets from semi-structured interviews and observations were coupled together in the analysis step for this paper. We used Dedoose for thematic analysis purposes (Braun & Clarke, 2006). We applied abductive coding, following a predefined codebook as well as creating new codes starting from the data. The finalised codes were then organised into themes, through which the results were described. In this paper, we present findings from the two themes 'roles' and 'place'.

5.0 Findings

5.1 The importance of roles

One of the core dimensions that emerged during data collection and analysis, was that of 'roles'. This is about the roles performed by actors involved in the network; the motivations and enablers of those actors performing those roles, the barriers faced by those actors; and the emotions of those actors undertaking such roles. The participants

of this study were involved in a wide range of organisations in which they occupied an equally wide range of roles, and these correspond with the levels of stakeholders outlined earlier in this paper.

The existence of the DDIN was enabled by funding to specifically tackle digital inequality in the county (Interviewee 3, L1) and for those weaving the network, the witnessing of connections being made, best practices being shared, and provision being improved is a key motivator. This feeds into the role of positive reinforcement in maintaining momentum within the DDIN; the sharing of success stories between network members is not only valuable in terms of skills and knowledge sharing but reminds members of the impact their work has on people's lives:

> *The benefits of a person who works as a facilitator of a network where you start to see how the sharing of information and the getting that sense of the bigger picture is really, really valuable.* (Interviewee 3, L1)

> *So, there's one that's really, I think, quite significant. It was a gentleman, only an individual, but somebody who was profoundly deaf, and the service that's providing him with support has been able to make such a difference for him.* (Interviewee 2, L1)

The importance of this positive feedback loop came across strongly in both interviews and observation. The quote above refers to a story shared by a network member in a DDIN meeting observed by the research team, and the quote below captures the joy and encouragement that connections between organisations foster:

> *It is that knock-on effect that is so inspiring, not just for me but for the people who have done it. And I think the news that I had last week from Community Charity that they had helped 405 individual people to understand computers – that is a fantastic achievement.* (Interviewee 8, L3)

Participants delivering digital inclusion activities spoke of their desire to help people, with many pinpointing the fear of technology as a significant obstacle to minimising digital inequality. In one case a participant referred to their own experiences of witnessing the impact digital exclusion can have in a society where

'digital-by-default' makes it increasingly difficult to maintain a good quality of life, coupled with their confidence in using ICTs as a key motivator for volunteering:

> *I've got some spare time at the moment, I've got a lot of experience of computers, phones, etc., so it's really an opportunity to give something back. And also, I see from relatives the exclusion that people are experiencing. Often, they're being forced into it because of modern life.* (Interviewee 9, L3)

It was also suggested that the individual character of those involved in delivering digital inclusion activities is an important consideration. There has to be a level of compassion towards users who experience technophobia and an understanding that skills that are perhaps intuitive to some are a steep learning curve for others:

> *I wouldn't like to think people were frightened of something which is relatively easy to understand. I don't mind. I spent 6 hours trying to teach a lady how to use a mouse, so I've got the patience.* (Interviewee 14, L3)

The time volunteers are willing to devote to the users of their digital inclusion activities is mirrored by the time DDIN members are willing to devote to feeding back to the network and supporting the work of others:

> *What struck me is the amount of goodwill there is amongst projects and organisations to communicate with each other and help each other out when they can. For instance, the surveys that we've been doing with our network, it's totally on their goodwill; we're not providing them with funding, or anything. We've had some really comprehensive answers and people have taken a lot of time, and some of the case studies that they've provided have given us such a personal insight into the difference that it makes.* (Interviewee 2, L1)

Just as user participation in digital inclusion activities was found to have social drivers, this research also found that those delivering services were motivated by the relationships that are built through providing support to others:

> *I mean, it's another reason I like doing it, actually, because you get to chat to some of the older residents of the Town and find out what the town was like*

and what the railway was like when it was running, and all sorts of things like that. (Interviewee 9, L3)

Considering the high proportion of volunteers involved in the provision of digital inclusion activities it is unsurprising that one of the key challenges is time:

They're often very busy. And with paid staff and with volunteers, they're often doing multiple things and multitasking, and so time is very valuable. (Interviewee 2, L1)

Linked with the barrier of time is the need to prioritise the distribution of resources to the most impactful activities, and this comes at a cost. One participant volunteering in the delivery of digital inclusion activities acknowledged that services need to be publicised better to increase their impact, but their organisation does not have the capacity to dedicate time to outreach:

It is more a matter of getting more publicity. I'm not at the moment – and I don't think Bill or anybody else is either – in a position to do an awful lot. (Interviewee 12, L3)

Directing an organisation's resources to the running of digital inclusion sessions only makes sense when those sessions are well-publicised and therefore well attended. Multiple participants, especially those who volunteer their time to deliver the sessions, acknowledged a general feeling of frustration with the poor attendance:

If we go and there is nobody there needing help you feel what am I doing here, it is a bit of a waste of time… If you haven't got anybody to deal with, it gets a bit boring sometimes. (Interviewee 10, L3)

Priorities can also be dictated by the terms stated by funding bodies, and it is in the organisation's best interest to adhere to the stipulations of the funding contract if they are to be successful in future bids:

People are time poor and resource poor, and they're always having to prioritise whatever they're being funded to deliver, whoever they've got a contract with or a grant with, they will prioritise delivering against those contracts. (Interviewee 25, L4)

Whilst the scale of the DDIN and the enthusiasm of its members to share best practices is a triumph, an L1 participant involved in the development and coordination of DDIN found this role overwhelming at times:

> *It's been exhausting at times. It has been challenging because… it's taken me right out of my comfort zone at times because there's so many different themes where digital overlaps and they're not necessarily where you have any expertise in or any standing. Whereas everyone seems to be an expert in their own particular field so it's quite hard.* (Interviewee 3, L1)

In addition to feeling overstretched and sometimes underqualified, multiple participants expressed their frustration that the efforts of voluntary organisations and charities within the network are overlooked by local governments. The DDIN was established to fill gaps in digital inclusion provision across the county, a service which some participants argue should be within the remit of the local government. For them, digital inclusion would be a statutory service, eliminating the need for a network and the organisations and charities it contains, the fact that this is not the reality has led Interviewee 11 to believe that the importance of this work is not recognised:

> *I would like to see a bit more acknowledgement of what they have done from the district council and certainly the county council because when we first set this up I called a meeting… and we had a senior county councillor come and there was a retort if you like, 'Stop trying to reinvent the wheel'. And what I would like to say to him now, 'I am not reinventing the wheel, I have added a few more spokes'.* (Interviewee 8, L3)

> *This is something that should sit with a statutory service really, something like a digital inclusion officer at the council. That should be where something like this sits, eventually. Because it does need to be considered a statutory thing, I think. It needs to be considered that important and I think at the moment it is not considered that important.* (Interviewee 11, L3)

Fortunately, there is no shortage of recognition within the network itself, the coordinators of the DDIN were forthcoming in their gratitude towards their members and praise of the vital work they do:

> *We're just here to facilitate it. They're the people that are making it happen and making it work, really. They're the important ones.* (Interviewee 2, L1)

L1 participants downplayed their value as 'guardians' and 'facilitators' of the DDIN, building and maintaining the network at a macro level (Marais & Vannini, 2021). However, in line with network weaving theory (Holley, 2013; Marais & Vannini, 2021), Interviewee 8 - who acts as a connector catalyst, forging links and promoting participation in a hyperlocal context - was clear that it is the interplay of different but equally important roles within the network that are key to its positive impact in the area:

> *All I am doing is joining the dots, but I think joining the dots is as important as being part of a service.* (Interviewee 8, L3)

5.2 The importance of place

A second core dimension that emerged during data was that of 'place'. Place in terms of rurality, the venues and locations where members of the network delivered their digital inclusion activities, and in how the digital inclusion network convened and communicated.

Our findings revealed that throughout our time engaging with the digital inclusion network, activities were being undertaken to grow and promote the network and cultivate relationships between the organisations. This was done by L1 using regular email communication and newsletters, online events, and the encouragement of knowledge sharing between organisations within and beyond the network, thus encouraging 3-way communication. L1 also collaborated with L2 to survey members of the digital inclusion network and completed a mapping exercise of digital poverty and digital inclusion activities within Derbyshire. Our qualitative insights enable a deeper understanding of the network.

The locations where organisations and volunteers set up their digital inclusion initiatives are fairly diverse, as are the range of services and activities related to digital inclusion they offer. This is reflected also in their being present and occupying spaces, and in the design of how these spaces would be and operate - or the inability of

organisations to have a say on this design. While some organisations operate within dedicated venues, specifically set up for digital inclusion activities, others have to use multipurpose rooms within other institutions, which are, at times, less ideal - but they make do. And finally, others adapt spaces they already use to offer other services, offering digital inclusion as an extension to these, rather than a distinct, dedicated space.

This is partly reflected also in their long-term vision for the offered services, and in the choice of technologies that are out at public disposal. For example, the people managing the network at L1 level mentioned more than once the example of food pantries, which have seen the necessity of providing their community with some digital access services in the last few years:

> *So you might have one that has people coming in to use the pantry and they've got a little laptop at the side because they don't have much space, and they just help them in the corner, to another one that's got an awful lot of space and it's maybe a little bit more formal in terms of the help that they provide [...] We do have a digital pantry in [an urban town] and they have no internet, so they're running it all with dongles. They're very resourceful. (Interviewee 2, L1)*

In our observations, this heterogeneity of places and spaces became apparent. We visited training sessions held within the premises of the local village hall, which also had a café providing high-quality coffee and freshly prepared meals. Both trainers and attendees usually meet before the training session to have coffee or tea and have a chat. Another organisation regularly hosts a digital café within the premises of a modern recreational building which was built with funding raised from the organisation itself during the Covid-19 pandemic. The facilities are also used by the community for sports and other community activities. The atmosphere is vibrant and the space is humming with activity. Upon entering, we were greeted with a spacious room with floor-to-ceiling windows on one wall, views of hills and playing fields, and French doors that lead out onto a big patio:

> *There is a group doing yoga on a Monday morning [...] And then Tuesday, we've got a number of district council health and wellbeing sessions. And also*

the facility is the start and end point for a community walk. So they'll walk around the grounds and through the park and back to the Recreation Building and then have tea, coffee, etc., [...]. Wednesday, that's another fairly full day because we've got more health and wellbeing sessions and Tai Chi. And then Thursday, Digital Café, which is a community helpline for anyone who has computer or mobile phone problems. And then Friday morning is a parent and toddlers group. (Interviewee 6, L3)

Irrespective of this heterogeneity, the place and space where organisations gather, as well as the way organisations set them up to meet communities' needs, seem to play an integral part in fostering community, providing educational experiences, and advancing digital inclusion. So much that barriers to accessing and organising suitable spaces for their activities are often felt as a barrier to participation from the community and the effectiveness of their digital inclusion efforts:

I prefer the library myself. When I first started they got a side room where there were refreshments, 20p [...] So, about halfway through, everybody get together and get away from the screens and have a good old chat and social. [...] It was nice but since this pandemic, the room has been shut off and now there's a fee of £14 to hire it. You've got to hire it, so I think that's the reason [we do not meet there anymore], I'm not sure, but it was really popular. People used to come with loads and loads of people, used to do what they'd got to do on the computer and then go for the [social] and then go back to the computer afterwards, yes. (Interviewee 1, L3)

Barriers to the establishment of the desired environment and infrastructure are usually due to financial constraints:

We are limited by the space we have got and everything. We are lucky in that the council let us use that for free, the library and where you went, the Community House. [...] It is free, I mean that is the thing, the whole thing is free to people because we don't get charged for the space. (Interviewee 10, L3)

Interviewees also insist on the importance of socialisation as a fundamental component of their activities. The opportunity of meeting and interacting with other people is a motivator for people to join and participate in the sessions, and a way for them not to feel alone and different as they need help to figure out how to access the digital environment. Organisations feel that fostering community and socialisation is another way they can contribute not only to more efficient digital inclusion services but also more vastly to their communities' well-being and development.

> *For the people that we supported, it was as much about the face-to-face contact and seeing someone as it was about what they were actually learning [...] And the main thing, the main motivation behind those has been about connections and helping people keep in touch with each other and have fun together of one thing or another. (Interviewee 13, L3)*

> *I think one of the things going back to the Digital Café, yes, they get a cup of tea and a biscuit, and yes they have the technology. But when they are doing either they are able to talk socially. [...] People have got the ability to talk about what their concerns are and how they can get the help, where they can get it and how much they need that help [...] I know some people had help with getting access to help for their own needs in their own home in their own time, without it being seen as an embarrassment, a dignity factor that people in older age don't want to apply for things. They think they are seen as scroungers and they are not. And that is the sort of thing, that is the impact that it is having on this social interaction and I am quite genuinely sure that some people just come for the cup of tea and a chat, as well as a little bit of information on computer work. It is that connectivity that has created such an almost bold, balanced organisation, a well-balanced input into the community. It is no push and shove – it is easy, easy and very, very well-received. (Interviewee 8, L3)*

L1 organisations also emphasise the significance of this element of socialisation for the volunteers themselves, who are finding in the network a space to support each other across organisations:

People can advise each other on the best way that they've found to recruit volunteers or ... Something that we've had feed back on is that people have found the [online] sessions are more likely to be attended if they're put across as being quite informal, not like teachy, teachy. And almost it's the social aspect that's emphasised. And we've been able to advise another project, who has set up sessions but isn't having the footfall that they wanted, that this is what other projects have found, that if you play it down almost but emphasise the social side and make it sound quite informal, people are more likely to come to you. So it's shared experiences, I guess, a lot of the time. (Interviewee 2, L1)

This is clearly an example of network weaving when L1 organisations operate as conduits putting organisations in touch with one another, e.g when one organisation needs to find a supplier of second-hand, refurbished digital devices to support one of their clients and L1 immediately puts them in touch with another organisation - solving the problem immediately, ultimately saving time for the organisation making the enquiry who had no idea where to find such refurbished but also cost as such devices as cheaper.

6.0 Discussion & Conclusion

This paper aimed to investigate digital inclusion network building as a mechanism for reducing digital poverty. The results of this research have evidenced how the importance of 'role' and 'place' are significant contributing factors when it comes to digital inclusion network building concerning understanding the context of where people reside, the localities and venues of where organisations are situated that deliver digital inclusion activities, and the roles of actors involved in building and sustaining the network. A limitation of this research was the short length of the project resulting in a short time period to collect data. Despite that, this research is able to offer the following conclusions and contributions as outlined below.

The results of this study align with previous research in which scholars have identified the importance of place-based solutions to digital inclusion by working collaboratively with the people who live and work locally to gain an understanding of

the needs of the community, but also the assets, resources and geography of a locality (Reisdorf and Rhinesmith, 2018; Park et al., 2019). Furthermore, the importance of facilities and the appeal of places and spaces are revealed to be crucial in digital inclusion initiative provision. As a result, the findings of this research conclude that the design of spaces should be prioritised to facilitate interpersonal interactions, fostering socialisation, promoting a sense of inclusivity, and ensuring overall comfort for individuals. Dedicated spaces should be intentionally designed and funded as part of digital inclusion initiatives and networks. These outcomes align with previous research that examined public access to information technology venues from a perspective of development and social change, which emphasised the importance of the "cool factor" (venues and spaces that are attractive, cosy, friendly, reliable) and social interaction in addressing digital access. The concept of 'coolness' and its influence on the access and interaction with technologies by social groups at risk of digital exclusion is still very little considered by the IS literature and certainly needs to be further investigated (Gould and Gomez, 2010; Vannini et al. 2015).

The use of volunteers revealed in this study also aligns with previous research on how they are deeply embedded within digital inclusion. Indeed, this study evidences how the network brought people together (both paid staff and volunteers). However, this study also revealed what could be argued as an overreliance on volunteers, as noted by previous research (Casselden et al., 2019). Such reliance makes the sustainability of digital inclusion activities fragile, as the availability of volunteers changes, particularly during a cost-of-living crisis, where they may no longer be able to afford to volunteer. A significant barrier revealed by both paid staff and volunteers was the lack of recognition by national and local policymakers of the digital inclusion work being provided. Such views align with previous research which highlights the disconnect between digital inclusion policy and practice (Wagg and Simeonova, 2022).

Finally, this study used NW to make sense of the data. It enabled us to reveal nuances in how digital inclusion networks are developed and operate and evidenced the role individuals and organisations play as part of that network. NW enabled our study to reveal a granular understanding of how different organisations rely on actors who possess a variety of motivations and experiences (as per Holley, 2013, everyone is a

network weaver), some operating through other networks, revealing the potential impact of how established networks operating within networks at local, regional and national and policy level can provide beneficial outcomes and generate capacity building. As a result, this paper reveals opportunities for change in the provision of digital inclusion initiatives through network building with an emphasis on 'roles' and 'place' that have implications for future digital inclusion delivery and policy and practice.

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