Co-producing a Theory of Change (ToC) and evaluation framework for local authority-led, city-wide digital inclusion programmes

Project results

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Executive summary

This research looks at how local authority-led, city-wide digital inclusion programmes can contribute towards addressing digital inequalities and how their impacts can be measured. It proposes a Theory of Change (ToC) that can be referred to by future city-wide digital inclusion programmes that was co-produced with two existing programmes in the cities of Leeds and Coventry.

Background
Addressing digital inequality is a global, national, and regional policy priority because of the significant adverse impacts digital exclusion can have on individuals and communities. The role of local authorities (and combined local authorities) in improving digital inclusion can be significant and includes convening local partners and facilitating collaboration, securing regional investment, coordinating action, and championing change (British Academy, 2022). However, understanding the mechanisms and effects of these "complex" digital inclusion programmes (Skivington et al., 2021) can be a challenge. These programmes' roles and value in facilitating, convening, and supporting organisations across sectors to design and deliver meaningful digital inclusion interventions remains unclear. This lack of evidence and understanding reduces the transferability of knowledge and experience, and inhibits the effective development of other, future, local authority-led digital inclusion programmes.

Aims and objectives
The aim of this research was to understand how local authority-led, city-wide digital inclusion programmes contribute towards addressing digital inequalities at a city-wide level and how this impact can be measured.

Individual project objectives that contributed towards this overall aim were:
- To develop a Theory of Change (ToC) for local authority-led, city-wide digital inclusion programmes that describes the contextual factors, common mechanisms and pathways from activities to outcomes.
- To develop an evaluation framework, including identifying measures and metrics, that can be used alongside the ToC for assessing the value and impact of local authority-led, city-wide digital inclusion programmes.
- To develop practical tools/messages to share the key learning with local and national government to support the effective development of future digital inclusion programmes.

Methodology
A case study methodology was employed to explore and compare the digital inclusion programmes of two English cities, Leeds and Coventry. Case studies focusing on these programmes, *100% Digital Leeds* and *#CovConnects*, were then used to help inform development of the ToC and evaluation framework. Face-to-face workshops were held in each city to gather data from the digital inclusion programmes' 'clients' – both external voluntary, community and social enterprise (VCSE) organisations and internal local authority teams. In addition, 1-1 interviews were undertaken with a total of four key stakeholders from both cities. A third workshop was then held with team members from both programmes to further refine the data. Learning from this project supports the transferability of knowledge and experience between local authorities and the effective development of further local authority-led digital inclusion programmes.

Results

The research results identified a number of ways in which city-wide digital inclusion programmes can, and do, increase digital inclusion, and a proposed ToC was successfully produced from these findings. Significant challenges were discovered with regard to measuring the impacts of a programme. Whilst a full evaluation framework was not developed due to these challenges, possible approaches to evaluation have been suggested and several related recommendations made.

The purpose of local authority-led, city-wide digital inclusion programmes is to support the complex needs of people and organisations in order to improve the quality of life of individuals and communities. Increasing 'digital inclusion' is an intermediate outcome. This reflects a view that the ultimate goal of digital technologies should be to improve peoples' lives or organisations' functioning in ways that are meaningful for them.

The main causal pathway is for digital inclusion programmes to increase digital inclusion at an organisational level so that delivery partners can more effectively support community needs. To achieve this, digital inclusion programmes must collaborate with delivery partners, build local and national partnerships, and drive change at a place-level. Working collaboratively with partners, targeting support to areas/communities with the greatest need and working with the complexity of digital inclusion/exclusion are part of how such programmes are delivered. City-wide, and broader, socio-economic factors and organisational contexts affect how these programmes are delivered. Digital inclusion programmes also have a role leading the digital inclusion agenda in their area and developing networks in order to build local capacity and create an environment that is conducive to increasing digital inclusion.

Evaluation of local authority-led, city-wide digital inclusion programmes is challenging; largely because they deal with numerous organisations, running multiple programmes, within the context of a place-level system tailored to community needs, and because there are multiple causal pathways to consider. The proposed ToC provides guidelines for potential evaluation approaches, and these include:

- Focusing on the impact of delivery partners.
- Measuring 'digital inclusion' as an important intermediate outcome through multiple indicators.
- Using standardised measures for programme activities that are shared, such as to measure programmes impacts on quality of life.
- Using qualitative methods including case studies.

Assessing the total impact of a digital inclusion programme in a city (or area) will require robust evaluation designs using mixed methods and multiple data sources at individual, organisation and place-level.

Recommendations

Based on the findings of this research, a number of recommendations, in three areas, were made to support the development of existing and future local authority-led, city-wide digital inclusion programmes.

Policy
- Strongly consider the value of addressing digital inequalities, not as an end in itself, but for the contribution this could make across multiple agendas and as a tool for empowering individuals and communities, improving quality of life, making financial savings and reducing inequalities.

- Recognise that multiple interventions (for example a device bank, training to use digital devices, support to apply for jobs online), probably running simultaneously, will be needed to address the complex causes of digital exclusion, including the underlying socio-economic conditions that effect digital inclusion/exclusion.
- Provide secure funding for long-term action to address digital inclusion; including enabling local authority-led, city-wide digital inclusion programmes to coordinate local activity to drive change and to build capacity with delivery partners in the local voluntary and community sector.

Practice
- Recognise that a local authority-led digital inclusion programme requires evaluation feedback to learn and improve, and that sharing data and metrics can help increase knowledge.
- Strongly consider that expectations around delivery partners engaging with evaluation activity be built into collaborations with local authority-led digital inclusion programmes.
- Where possible, build in and plan evaluation activities at the start of implementing a local authority-led digital inclusion programme – based on an understanding of ideal pathways from actions to outcomes.
- Further develop practical toolkits that can be used to guide local authorities in developing their own digital inclusion programmes, particularly a refined and tested evaluation framework that includes practical resources to guide evaluation.

Research
- Further testing and refining of the ToC is needed using different models and in varying contexts (for example, rural settings). A feasibility study/pilot trial of a full evaluation framework is needed to explore whether the proposed measures are appropriate to detect whether interventions have led to improvements in proposed programme outcomes.
- Further research is needed to identify a dashboard of metrics/tools that could be used to measure the identified programme impacts (recognising some programme outcomes may differ across programmes and contexts). This research would also involve identifying 'measures in common' that can be used by different local authority-led programmes and that should maximise cost savings and efficacy and allow for comparability over time and between places.
- Separate process evaluations are recommended to illuminate the success and challenges around programme implementation/delivery.

Proposed Theory of Change of a city-wide, local authority-led digital inclusion programme
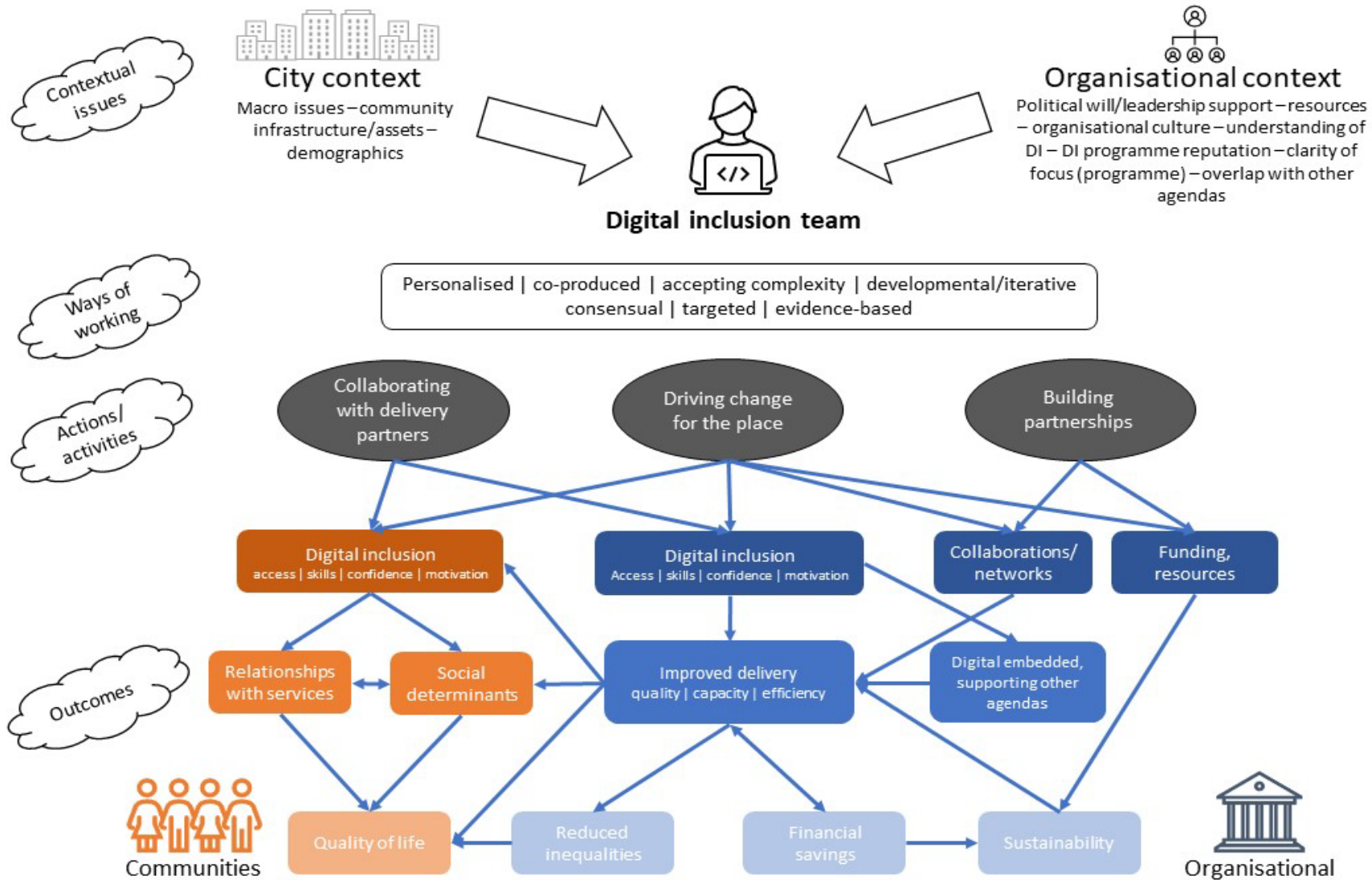
1   Introduction

1.1   Overview of report

This report presents the findings of a collaborative research project between Leeds Beckett University (LBU) Centre for Health Promotion Research (CHPR) and the digital inclusion teams of Leeds City Council, *100% Digital Leeds*, and Coventry City Council, *#CovConnects*. It looks at how city-wide programmes led by local authorities can contribute towards addressing digital exclusion and inequality at a city level and how this impact can be measured.

The background to this research and the specific aims and objectives of the project are outlined in this first chapter. A case-study research methodology was used to understand two existing local authority-led, city-wide digital inclusion programmes, which are then described and justified (Chapter 2). Next, the results of the research are presented, including a discussion of each programme and then the common proposed Theory of Change (ToC) and proposals regarding evaluation (Chapter 3). Finally, overall conclusions and recommendations are set out (Chapter 4).

1.2   What are digital inequalities and why do they need to be addressed?

In the United Kingdom (UK), there are disparities in how people access, use, and benefit from digital technologies. These digital technologies include important areas such as e-health, online job or benefits applications. This disparity is widely referred to as 'digital inequality' (Stone, 2021; British Academy, 2022; Ragnedda et al., 2022; Blackwell et al., 2023). People who can access, use and/or benefit from digital technologies can be described as 'digitally included', and those who cannot as 'digitally excluded'. Digital inclusion/exclusion is not a permanent state; people are likely to move in and out of digital inclusion/exclusion across their life course depending on their circumstances. Digital inclusion/exclusion can also apply to organisations as well as individuals. Digital inclusion interventions and programmes aim to address these digital inequities.

The causes of digital inequality in the UK are complex and multi-faceted, commonly linked to broader social inequalities and exclusionary processes, and some groups of people are at greater risk of digital exclusion than others (Office for National Statistics, 2019). Research suggests that there are four key barriers to how people use, or do not use, digital technologies (Department for Digital, Culture, Media and Sport and Department for Science Innovation and Technology, 2017). These are as follows.

- *Access*: the ability to have access to digital technology.
- *Skills*: the ability to use digital technology.
- *Confidence*: a fear of crime, lack of trust or not knowing where to start with the digital technology.
- *Motivation*: understanding why using digital technology is relevant and helpful.

Increasing 'digitisation' is making digital inclusion essential for individuals to engage fully with society and the economy. Addressing digital inequality is now a global (United Nations, 2021), national (British Academy, 2022) and regional (West Yorkshire Combined Authority, 2022) priority.

1.3 Place-based approaches to addressing digital inequalities (in the UK)

To address the complex personal, social and structural causes of digital inequality, strategic and coordinated activity targeting people and places is required, with some local authorities taking action. This means interventions to simultaneously increase access to digital technology, improve digital literacy and skills, and support peoples' confidence and motivation to use digital technology.

Examples of place-based and collaborative approaches to addressing digital inequality have shown success in the UK (Good Things Foundation & J.P. Morgan Chase Foundation, 2022). Local authorities (and combined local authorities) can have a significant role in helping to understand local landscapes and challenges, reaching digitally excluded people and communities through established relationships, convening local partners and facilitating collaboration, securing regional investment, coordinating action, and championing change (British Academy, 2022). In England, the local authorities of towns and cities like Leeds, Coventry, Croydon, Salford, Stockport and Wigan have pioneered developing placed-based digital inclusion programmes (Good Things Foundation and Capita, 2021). However, understanding the mechanisms and effects of these "complex" programmes (Skivington et al., 2021), and not just their components/projects, has been, and remains, a challenge. The role and value of local authorities in these programmes, in facilitating, convening, and supporting organisations across sectors to design and deliver meaningful digital inclusion interventions, remains unclear. This lack of evidence and understanding reduces the transferability of knowledge and experience between local authorities, inhibiting the effective development of other local authority-led programmes.

1.4 Approaches to measuring digital inclusion/exclusion

The measurement of digital inclusion/exclusion is challenging and contestable. While digital inclusion/exclusion is difficult to fully measure due to its multifaceted nature, it is nevertheless important to try to apply consistent and standardised approaches to understand the impact of different interventions.

Single metrics of digital inclusion can be easily standardised. For example, measures of access and use of technology, quality of access/use of technology, affordability of technology, and measuring digital skills can be simply repeated and reproduced (Sharp, 2022). However, these may fail to assess the complexity of digital inclusion. Some studies have used combinations of metrics, such as standalone digital-related surveys, self-assessments, and 'big data', to form composite indices that reflect the multifaceted nature of digital inequalities (Minges, 2005; Sharp, 2022). However, such population-level data may miss, or obscure, the nuances of digital exclusion at community and individual levels. Those insights are more likely to come from local organisations and teams working in communities who have trusted relationships with digitally excluded groups, but who rarely have the expertise, understanding and/or capacity to undertake rigorous evaluation themselves.

Toolkits and approaches have been developed for individual digital inclusion projects working with defined populations or on specific aspects of digital inequality (e.g. Herlitz & Harden, 2021; Just Economics, 2017). *100% Digital Leeds'* own pathfinder report for the Local Government Association (100% Digital Leeds, 2022) describes an approach to evaluation suitable for individual projects but not a whole programme. A significant issue for city-wide digital inclusion programmes is identifying standardised measures that allow for comparisons over time and between different locations but still sufficiently capture the complexities of digital inequalities.

1.5 Aims/objectives

The aim of this research is to understand how local authority-led, city-wide digital inclusion programmes contribute towards addressing digital inequalities at a city-wide level and how this impact can be measured.

Individual project objectives that contribute towards this overall aim are as follows:

- To develop a Theory of Change (ToC) for local authority-led, city-wide digital inclusion programmes that describes the contextual factors, common mechanisms, and pathways from activities to outcomes.
- To develop an evaluation framework, including identifying measures and metrics, that can be used alongside the ToC for assessing the value and impact of local authority-led, city-wide digital inclusion programmes.
- To develop practical tools/messages to share the key learning with local and national government to support the effective development of future digital inclusion programmes.

This research contributes to the British Academy's priorities by providing insight into the way governments at different levels contribute to tackling digital exclusion and use digital means to tackle inequality. The focus on place is ostensibly at a city-wide level, although the importance of local contexts below this are also recognised and considered. The research supports Policy Lesson 6 of the British Academy report, *Understanding Digital Poverty and Inequality in the UK*: "Local and regional authorities, when working with civil organisations, charities, and businesses, will be best placed to understand local and regional needs and adjust to situations on the ground, including changing economies and demographics. Consistent investment in and support for decentralised interventions over medium to long-term timescales can help address digital poverty." (British Academy, 2022).

2 Methodology

2.1 Case study approach

A multiple-case study methodology (Yin, 2018) was used. A case study approach allowed for in-depth exploration of the included digital inclusion programmes (cases). Comparison across cases produced more compelling evidence (compared to a single case study) to inform the effective development and evaluation of similar programmes in other local authorities.

Two cases – *100% Digital Leeds* (Leeds) and *#CovConnects* (Coventry) – were explored and compared, including the digital inclusion programmes themselves and related contextual factors, to produce a common Theory of Change (ToC) and evaluation guidelines for local authority-led, city-wide digital inclusion programmes. These programmes were selected from the limited number of existing similar programmes in England because they have commonalities (e.g. aims, operational structures) but also differences (e.g. age of programmes, operational resources) that allow for comparison. Examples of other programmes that share some common structures include Birmingham, Liverpool and York.

100% Digital Leeds is arguably the most established digital inclusion programmes in the country, and the programme team has shared aspects of their approach with many other places (*100% Digital Leeds*, 2022). The decision to include *100% Digital Leeds* and *#CovConnects* was therefore in part pragmatic, but also based on differences relating to age of programme, operational resources, and city contexts.

The advantage of using two case studies with similarities in their programme aims and operational structures allowed for in-depth exploration of how the programmes operated in different contexts, and the impact this had on a ToC. However, it is also recognised maximum variation sampling, selecting city-wide programmes based on different aims and/or operational structures, could have possibly led to a ToC relevant to a greater diversity of programmes.

Further detail on each programme is given in the results chapter (Chapter 3).

2.2 Theory of Change (ToC) approach

A Theory of Change (ToC) is a theory of how and why an initiative works which can be empirically tested by measuring indicators for every expected step on the hypothesised causal pathway to impact (Weiss, 1997). A ToC approach has been used to make explicit the links between programme goals, outcomes, and the context in which they are implemented (Obj. 1), allowing for variations in activities offered and communities engaged with (Green & South, 2006).

The ToC for this project was co-produced by the multidisciplinary research team and external stakeholders. In both case study sites, facilitated discussion workshops were held to surface and map out common mechanisms and pathways, from activities to outcomes, within the digital inclusion programmes; along with any potential factors (positive or negative) that might influence outcomes or considerations about when and how to measure changes (Obj. 2). Workshops were held in-person (x3 in Leeds, x1 in Coventry). In addition, key informant interviews (n = 6) (Lokot, 2021) were conducted across the two case study sites[1], which fed directly into the evaluation framework design (Obj. 2).

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[1] Key informant interview participants were originally envisaged to be individuals working at a local authority level with specialist knowledge of the data available at different scales (e.g. city-wide, electoral wards, LSOAs) in each

2.3 Data collection and analysis procedure

The stages of the research process are outlined in Figure 1.

1. Ten to fifteen key stakeholders in each case study site were identified to participate in Theory of Change (ToC) workshops. These included people from the local authority, NHS and civil society organisations with some perceived knowledge of and/or interest in the programmes in their respective sites (Leeds or Coventry). These participants were selected based on a recruitment strategy of recommendations by the digital inclusion programmes.

2. Stakeholders in each site were invited to take part in one ToC workshop within their own site and one collaborative ToC workshop for stakeholders from both sites (three workshops in total).

3. Workshop 1 was held in Leeds on 22/5/2023 to discuss *100% Digital Leeds.* Eight stakeholders took part, including members of the *100% Digital Leeds* team, Leeds City Council, and local civil society organisations. Workshop 2 was held in Coventry on 26/5/2023 to discuss *#CovConnects*. Fifteen stakeholders took part, including members of the #CovConnects team, Coventry City Council, and local NHS, academics, and civil society organisations. Workshops 1 and 2 discussed pathways from activities to outcomes, potential mechanisms of impact, and influencing factors for the respective programmes. Discussion was audio recorded and written notes taken.

4. Relevant published documents (e.g. reports, websites) about *100% Digital Leeds* and *#CovConnects* were identified by the project team and analysed.

5. Data about each case study site (workshop data, documents) were analysed separately using within-case framework analysis but using the same analytical framework.

6. Separate ToCs were drafted for each case study site and shared with the respective digital inclusion programme leads for feedback. A supplementary workshop session was held with the *100% Digital Leeds* programme team on 14/6/2023 to discuss and refine the Leeds-specific ToC. The *#CovConnects* programme team fed back via email correspondence.

7. A common ToC for a generic local authority-led, city-wide digital inclusion programme was then drafted by synthesising the workshop data (using cross-case framework analysis) and merging the two separate ToCs.

8. Workshop 3 (for stakeholders from both sites) was held on 17/7/2023 in Leeds. Seven members of the *100% Digital Leeds* (n=4) and *#CovConnects* (n = 3) programme teams participated. Participants discussed the draft ToC and agreed alterations (Appendix 3). Current evaluation and monitoring practices for each programme were discussed and mapped to the draft ToC to identify under and/or over evaluated areas (Appendix 4).

9. Six 1-1 key informant interviews were conducted across the two case study sites (four in Leeds, two in Coventry). Interview participants were sampled purposively and were front-line staff (digital trainers, n = 1) and managers from VCSE organisations (n = 2), a city council employee (n = 1) and regional governmental senior manager (n = 1). Thematic analysis was used to analyse the interview data.

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case study, including public health and local authority data teams. However, during development of the ToC(s) it became apparent that the main mechanisms and pathways to impact concerned organisations with whom local authority-led city-wide digital inclusion programmes collaborated, and so the focus of the data collection for the evaluation framework shifted to these organisations.

Figure 1 Stages of the research process

3   Results

In this chapter, the findings for each case study site are presented separately but using the same analytical framework – *outcomes, actions/activities, ways of working* and *contextual information.* Diagrams for the two city-specific Theory of Changes (ToCs) are depicted in Appendix 1 and 2, respectively. The proposed common ToC (see Appendix 3) and evaluation framework for a generic local authority-led, city-wide digital inclusion programme is then presented.

3.1   100% Digital Leeds

3.1.1   About

100% Digital Leeds is arguably the most established and developed local authority-led, city-wide digital inclusion programme in the UK. Initiated by a Leeds City Council Scrutiny Board inquiry in 2015, the council continues to invest in a permanent team of up to six members to lead the programme and drive the digital inclusion agenda across the city (Leeds City Council, 2022). The team works with over 200 organisations, teams and services across the city to design bespoke digital inclusion interventions based on the needs of a particular geographical community (e.g. electoral ward) or community of interest (e.g. unpaid carers, older people or people with learning disabilities). These interventions are embedded within existing support mechanisms around that community. The *100% Digital Leeds* programme team also brings organisations together to learn from each other, especially from those who are further along their digital inclusion journey. The programme has brought over £2 million in funding for digital inclusion into the city in the past two years (at time of writing), increased the capacity of local civil society organisations, and built the digital inclusion ecosystem across Leeds (Leeds City Council, 2022). *100% Digital Leeds* programme team members have spoken at dozens of national conferences, roundtables, and forums, as well as to many local councils interested in developing their own city-wide digital inclusion programmes. The model has been described in a Local Government Association pathfinder report (100% Digital Leeds, 2022).

3.1.2   Leeds Theory of Change

Outcomes

100% Digital Leeds aims to effect a range of positive outcomes for individuals, organisations, communities and the city as a whole. Many outcomes are interconnected and follow multiple causal pathways.

The programme aims to tackle the four main barriers to digital inclusion – access, skills, confidence, and motivation – for individuals and organisations. However, increasing digital inclusion *per se* is not the ultimate aim of *100% Digital Leeds.* Rather, increased digital inclusion is an intermediate outcome on the pathway towards supporting people to live happier, healthier and easier lives via improvements to the social determinants of health and wellbeing. This includes enabling improvements to service access, self-care, economic prosperity, housing, media literacy and social connections, and reducing crime/reoffending and food poverty.

Empowerment is a key outcome of the programme. *100% Digital Leeds* aims to enable individuals, organisations, communities, and the city, to use digital tools, technology and services to do things that are important to them. In this sense, *100% Digital Leeds'* outcomes are personalised to whom they are working with and open-ended.

An important intermediate outcome of *100% Digital Leeds* is for community-based services to improve their digital inclusion offer in some way. 'Improved' could mean a variety of things that can directly or indirectly affect end-users. For example, an employment support organisation being able to train service users to search and apply for jobs online, or an organisation saving money on purchasing new IT equipment that can be reinvested in front-line services. 'Improved' services may also involve organisations becoming more digitally included themselves in some way (access, skills, confidence, motivation).

100% Digital Leeds aims to support delivery of economic benefits for organisations and the city as a whole. It aims to bring funding into the city and support organisations to bid for funding/grants. Potential cost savings from enabling services to be delivered more efficiently through increased digital inclusion is another potential economic outcome.

Finally, improving their own offer/service is another outcome achieved by *100% Digital Leeds*. This occurs following improvements in knowledge of potential collaborators and community needs. Gaining evidence of 'what works' – through formal evaluation/research or tacit knowledge – is another intermediate outcome towards an improved *100% Digital Leeds* offer/service.

Actions/activities

The things that *100% Digital Leeds* does are organised into three groups: work with delivery partners, building partnerships and leading digital inclusion for the city.

100% Digital Leeds does not deliver digital inclusion services directly to individuals and communities. Rather the team works with 'delivery partners' – internal council departments, external organisations (commonly in the VCSE sector), and NHS and private companies (such as care homes) – to support them in embedding digital inclusion into their existing services and activities. Work with delivery partners includes: digital inclusion awareness workshops for staff and volunteers across an organisation; co-producing plans for augmenting existing services or developing new ones to increase digital inclusion; helping partners understand how they could use digital technology to increase digital inclusion; facilitating access to training and other resources; signposting and connecting partners with other organisations; and supporting funding applications.

In terms of building partnerships, *100% Digital Leeds* facilitates formal digital inclusion networks for partner organisations in the city themed around a particular issue or community of interest (e.g. learning disability and autism, older people). A *100% Digital Leeds* team member coordinates each network to enable peer-learning and support. *100% Digital Leeds* also works on building informal, localised partnerships with and between partner organisations in response to specific needs and to build organisational capacity. Building partnerships and networks with organisations outside of the city is another activity, such as sharing learning and best practice with other local authorities, or encouraging external businesses (e.g. Barclay's Digital Wings, Hubbub's Community Calling) or civil society organisation (e.g. Good Things Foundation) to bring resources (e.g. money, expertise, equipment) to the city.

Finally, *100% Digital Leeds* has a *de facto* role leading the digital inclusion agenda for the local authority. It advocates for, and champions the importance of, digital inclusion within the Council and with partners. It has led city device-lending schemes and co-administers a grant fund for local VCSE organisations. It has been involved in organising city-wide digital inclusion events and shares best practice and learning with partners.

Ways of working

100% Digital Leeds' actions/activities are underpinned by an ethos that sets out its ways of working.

- Security: The programme has long-term funding from Leeds City Council and an increasing number of permanent staff members.
- Community-based: In all its activities/action, *100% Digital Leeds* sets out to work with existing community assets and infrastructure that are already embedded in communities rather than establish new ones.
- Person-centred: While *100% Digital Leeds* is aware of what interventions and activities are likely to be impactful, its guidance and support is always tailored to the organisations and communities with whom it works.
- Strength-based: *100% Digital Leeds'* default starting position is always that all collaborators have something (knowledge, experience, resources) that can be built on in co-producing actions/activities.
- Partnership and co-production: *100% Digital Leeds* always works with partners rather than telling them what to do. While *100% Digital Leeds* has expertise around digital inclusion/exclusion, it is not an expert on 'what works' for all organisations and communities. Knowledge and experience from all collaborators is included in designing actions/activities.
- Furthest-first: This means prioritising support towards organisations, communities, and individuals that are most at risk of digital exclusion before those experiencing fewer barriers to digital inclusion.
- Digital inclusion is a means to an end, not the end goal: *100% Digital Leeds* does not see 'digital inclusion' as an end in itself. It works with partners to put in place actions that, through digital inclusion, enable communities to better meet their needs.
- Ongoing and iterative: *100% Digital Leeds'* support of partners is seen as part of a journey where one action/activity builds on the last. The actions do not necessarily provide the solution straight away.
- Evidence-based: *100% Digital Leeds* intends its work to be based on the best-available evidence of 'what works' to address digital inclusion for different communities. This can be team members' own tacit knowledge, evidence from local evaluations, or national/international research.
- Consensual: Partners are under no obligation to collaborate with *100% Digital Leeds*. This is to foster enthusiasm when collaborating and to ensure that power is more equally shared between collaborators.
- Celebrate success (big and small): This is in recognition that addressing digital inclusion is complex and challenging. Any successes should be celebrated and built upon.

Contextual information (that can affect implementation)

100% Digital Leeds does not exist in a vacuum. It occurs in a specific context that effects the operation and organisation of the programme.

The programme is based in Leeds, West Yorkshire, with a population size of approximately 812,000 (based on Census data; Office for National Statistics, 2022a). In terms of deprivation, 24% of the Lower Super Output Areas (LSOAs) in Leeds are ranked amongst the 10% most deprived nationally (Leeds City Council, 2019). The city of Leeds contains some very diverse communities that are all relatively close together in a mostly urban setting. Specific communities, based on both geography and identity, are at greatest risk of digital exclusion

(e.g. older people, refugees and asylum seekers, gypsy and traveller communities, people who are autistic and/or have learning disabilities). The city has a relatively established and large VCSE sector. The civic infrastructure, including community (e.g. parks) and public services (e.g. public transport), is fairly good in most areas. Increasing digitisation is occurring across the city – an increasing number of public and commercial services are moving to 'digital by default' – emphasising the need to address digital inclusion. It is worth noting, however, that the Leeds Digital Strategy has an explicit commitment to 'digital first, but not digital only'. Digital inclusion is one of the foundations of the strategy, and *100% Digital Leeds* is a key player in its delivery (https://www.leeds.gov.uk/plans-and-strategies/digital-strategy).

Within Leeds City Council, addressing digital exclusion is viewed favourably and documented as a council priority. There is a recognition of the overlap between addressing digital inclusion and other council priorities, such as reducing health inequalities, sustainability, and growing the local economy. Council support and belief in the importance of addressing digital inequalities has built over time, partly as an outcome of *100% Digital Leeds* ongoing efforts to get digital inclusion/exclusion on the agenda.

There is an understanding among key local decision makers that digital inclusion/exclusion is a complex issue linked to wider social issues, and therefore an acceptance that solutions are long-term. Similarly, reducing digital exclusion is recognised as an intermediate outcome towards other changes, not an end in and of itself.

3.2   #CovConnects
3.2.1   About
Coventry City Council began its digital inclusion journey in early 2022, working with the *100% Digital Leeds* team on the Local Government Association (LGA) pathfinder to understand how the local authority-led model could be replicated in other local authorities. After working with Leeds, Coventry launched their digital inclusion programme under *#CovConnects*. So far, *#CovConnects* has worked with over 60 organisations and teams to develop a diverse range of interventions and support. *#CovConnects* has four full-time and one part-time staff members (three of whom are permanent) and is embedded within the council's response to the cost-of-living crisis and is exploring the relationship between digital and health inequalities within its communities.

3.2.2   Proposed Theory of Change
Outcomes
Like *100% Digital Leeds*, #CovConnects aims to achieve multiple outcomes and effect positive change for individuals, communities, organisations, and the city as a whole. Also, like *100% Digital Leeds,* #CovConnects sees 'increased digital inclusion' as an intermediate outcome towards having a positive effect on individuals' lives and the functioning of organisations.

For individuals, *#CovConnects* aims to improve the skills, confidence, access and motivation of people to use digital technology (e.g. 'digital inclusion'). It wants this to be part of the pathway towards improvement in individuals' wellbeing and quality of life, social determinants of health (e.g. housing, employment, social connections), and individuals' relationships with services (statutory and VCSE). Importantly, *#CovConnects* does not decide or control what outcomes are achieved from becoming digitally included, but rather aims for *better or improved* outcomes across a wide range of factors.

For organisations with whom *#CovConnects* collaborates, the aim is to increase digital inclusion via improvements in skills, confidence, access, or motivation to use technology as part of their work. Through its work *#CovConnects* aims to improve organisations' awareness of digital exclusion for residents, improve service delivery and address how organisations can embed digital supports within their current service - thus benefitting both organisations and individuals. As with *100% Digital Leeds*, 'improvements' in service delivery can be variously defined, including providing more appropriate and effective services to communities or making financial savings through working more efficiently. *#CovConnects* also aims to increase collaboration between the teams within organisations – again, in support of improving services and access for communities.

For the city of Coventry, *#CovConnects* aims to improve relationships and increase trust between communities – particularly those at risk of health and digital inequalities – and to improve 'systems' and services (e.g. local health, including NHS, public health, and VCSE organisations). *#CovConnects* aims to support delivery of broad economic benefits for the city by enabling individuals and organisations to do things more efficiently (e.g. online rather than in-person) and by bringing in external grant funding and investment. Importantly, *#CovConnects* does not promote a digital-only agenda but aims to build confidence in digital channels and support people to gain digital skills and confidence, thus improving inclusivity and accessibility, whilst still retaining the need for other support types within the city. Finally, *#CovConnects* aims to effect a reduction in inequalities in the city, particularly in health, and actively engages with the city's Marmot Partnership[2] – as demonstrated by digital inclusion recently becoming a Marmot indicator for the city.

Actions/activities

As with *100% Digital Leeds*, *#CovConnects'* actions/activities are organised into three groups: work with delivery partners; building partnerships; and leading digital inclusion for the city. The majority of *#CovConnects'* work is with delivery partners – either external (e.g. VCSE) or other teams within Coventry City Council that are themselves delivering services, activities, and interventions with communities. *#CovConnects'* provides support to these partners around digital skills and organises or delivers training, thereby helping organisations to understand digital inclusion/exclusion (including definitions and causes). It also co-produces plans to improve existing services/actions or implement new ones, signposting and connecting organisations to further resources and supporting organisations to access funding.

#CovConnects' Building Partnerships theme is about actions/activities that increase connections between stakeholders in the city. *#CovConnects* builds internal networks within the city council, making connections to involve different teams and individuals within relevant actions/activities. *#CovConnects* also makes connections with, and between, organisations across the city, including VCSE organisations working with communities and businesses. Currently there are two networks, one for older adults and another for people who are experiencing homelessness. Finally, #CovConnects works on building connections with organisations outside of the city that can facilitate additional resources coming into the city. For example, the *#CovConnects* team reached out to *100% Digital Leeds* to draw on their expertise while their programme was initiating. They also worked with Coventry City Council digital services colleagues to engage large technology companies that the council procures

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[2] Coventry became the first Marmot City in 2013, aiming to implement principles set out in the Marmot Review, *Fair Society, Healthy Lives (Marmot, 2010)*, to reduce inequality and improve health outcomes for all. Marmot principles have been embedded into core functions of the city council and its partners (https://www.coventry.gov.uk/coventry-marmot-city-1/coventry-marmot-city#:~:text=The%20Marmot%20principles%2C%20from%20the,for%20the%20NHS%20and%20public).

services from to donate IT equipment to the *#CovConnects* device bank or provide *pro bono* IT support/training to local VCSE organisations. The team also explored opportunities to use new or existing technology to improve digital inclusion by attending conferences, trade shows and events. Importantly, *#CovConnects* ensures its offer is appropriate for VCSE organisations and responds to identified needs.

#CovConnects, like *100% Digital Leeds*, occupies a role as the *de facto* lead for digital inclusion in the city. This includes strategic elements, such as advocating/championing the importance of addressing digital exclusion within the council and with local statutory bodies, and working to create signposting and referral pathways between organisations. It also includes practical activities like coordinating city-wide activities and resources, such as the *#CovConnects* Device Bank which obtains new or refurbished digital technologies to gift to organisations and communities in need. This is part of a wider, holistic offer from *#CovConnects*, which works with organisations to address barriers across connectivity, skills and motivation, in addition to supplying devices *#CovConnects* also runs city-wide events, for organisations and communities. Finally, *#CovConnects* is responsible for sharing learning and best practice about digital inclusion/exclusion across the city.

Ways of working
#CovConnects' actions/activities are, like *100% Digital Leeds'*, underpinned by a way of working that is defined by some core values. *#CovConnnects* shares most of its ethos with *100% Digital Leeds* but there are some differences:
- Community-based:– In all its activities/actions, *#CovConnects* sets out to work with community assets and infrastructure that are already established and embedded in communities rather than to set up new ones.
- Person-centred: While *#CovConnects* has experience of what interventions and activities are likely to be impactful, its guidance and support is always tailored to the organisations and communities with whom it is working.
- Partnership and co-production: *#CovConnects* always works collaboratively with partners rather than telling them what to do. *#CovConnects* brings expertise around digital inclusion/exclusion, collaborators bring their own expertise about, for example, 'what works' for communities. Knowledge and experience from all collaborators are included in designing actions/activities.
- Targeted (rather than furthest-first): *#CovConnects* targets support at particular communities or around particular themes (e.g. dementia) and works with organisations and communities based on perceived need; supporting those with the greatest need first.
- Digital inclusion as a tool, not the end goal: *#CovConnects* does not see 'digital inclusion' as a target. It works with partners to put in place actions that, through digital inclusion, enable communities to better meet their needs.
- Ongoing and iterative: *#CovConnects'* support of partners is seen as part of a journey where one action/activity builds on the last. It does not necessarily provide the solution straight away.
- Evidence-based: *#CovConnects* intends for its work to be based on the best-available evidence of 'what works' to address digital inequalities for different communities. This can be based on team members' knowledge, evidence from local evaluations, or national/international research.
- Consensual: Partners are under no obligation to collaborate with *#CovConnects*; they do not have to collaborate if they do not want to. This is to ensure enthusiasm in collaboration and to ensure that power is more equally shared between collaborators.

- Celebrate success (big and small): This is in recognition that addressing digital inclusion is complex and challenging. Any successes should be celebrated and built upon.

Contextual information (that can affect implementation)

#CovConnect operates in the city of Coventry, based in the West Midlands, with a population size of approximately 345,300 in 2021 (based on Census data; Office for National Statistics, 2022b). In terms of deprivation, 14% of the Lower Super Output Areas (LSOAs) in Coventry are ranked amongst the 10% most deprived nationally (Coventry City Council, 2020). Coventry, which, like Leeds, has very diverse communities that are physically close together in mostly urban settings. The city also has a relatively high number of economic migrants and refugees/asylum seekers, adding to the diversity.

The city is thought to be relatively well-connected, both physically (e.g. public transport) and in terms of technological infrastructure (e.g. plentiful new fibre broadband cable). However, there remains lots of digital exclusion, with some communities (e.g. new arrived migrants, older people, disabled people, people living in socioeconomically disadvantaged neighbourhoods and people who are experiencing homelessness) at more at risk than others.

The city has a reputation for being innovative and willing to try new things. Reducing demand on local health services is a city-wide priority.

Compared to *100% Digital Leeds*, *#CovConnects* is a young programme. Programme recognition is growing internally and externally but it has not yet been fully realised. There is political support for the programme. A challenge for *#CovConnects* is an, at best, lack of awareness and, at worst, scepticism about the programme. It also does not yet have an extensive track record or body of evidence to refer to. Addressing digital inequalities is a cross-cutting issue that should positively impact multiple local priorities and agendas. Demonstrating this contribution is a potential enabler of the programme. However, conversely, being drawn in multiple directions is challenging and can result in a perception of a lack of a clear focus. The potential fragility of external organisations that *#CovConnects* might collaborate with, particularly in the VCSE, is an additional challenge.

3.3 Main differences between *100% Digital Leeds* and *#CovConnects*

At the beginning of their digital inclusion journey, Coventry City Council worked with the *100% Digital Leeds* team on the LGA pathfinder to understand how the local authority-led model could be replicated in other local authorities. Therefore, unsurprisingly many similarities in the operational structures (e.g. ways of working and activities) of the programmes were reported. Differences between the two programmes mainly relate to the age of the programmes (*100% Digital Leeds* was setup in 2015 and *#CovConnect* in 2022), and include:

- *Programme delivery*. Possibly a result of the infancy of the *#CovConnects* programme, the team are more actively involved in programme delivery, such as management of a device bank, whereas the *100% Digital Leeds* have more of a strategic and consultancy role with many of the organisations and teams they work with.
- *Established networks*. In reflection of the maturity of *100% Digital Leeds*, the programme is involved in co-facilitating numerous formal digital inclusion networks with partner organisations in the city, themed around a particular issue or community of interest (e.g. learning disability and autism, older people). These networks focus on sharing best practice and building capacity across organisations (e.g. through partnership working, sharing funding opportunities and supporting funding applications) with the support of the programme team. Whilst *#CovConnect* has two established

networks (supporting older people and those experiencing homeless), these are in their infancy and work on a model of sharing best practice.

- *Collaborations.* Whilst both organisations are collaborating with partner organisations, *100% Digital Leeds* have developed some more embedded relationship with their partners. For example, as a result of funding bought in by the team and partners, there are digital inclusion officers in Leeds that are based within community organisations and matrix-managed by *100% Digital Leeds*, to extend the reach and expertise of the team. Whereas the digital inclusion team for *#CovConnects* are based within the local authority.
- *Number of collaborations. 100% Digital Leeds* were working with over 200 organisations and *#CovConnects* were working with approximately 60 organisations.
- *Brand establishment*. Whilst *100% Digital Leeds* is more of an established brand, *#CovConnects* is a young programme that is still trying to establish programme awareness. It was recognised programme awareness and trust in the programme takes time to build, highlighting the importance of long-term programme funding and evaluation activities to demonstrate value.
- *Evidence base. 100% Digital Leeds* has built up an evidence base through project evaluation and experience of delivery which they use to inform their ongoing work. Whereas, due to the age of the programme *#CovConnect* has not yet built up the same knowledge base. However, neither have conducted full programme level evaluations.
- *Resources.* At the time of data collection, *100% Digital Leeds* had six permanent staff members, *#CovConnect* had four full-time and one part-time members of staff (including three permanent members of staff). Both programmes are working with external organisations to bring money into their respective cities to support digital inclusion, Leeds is doing this on a larger scale.
- *Location and remit within the council structure.* Contextual differences were also evident within the structure of the local authorities. The teams sit within different places within the local authority which could therefore impact on the remit of the programmes. For example*, #CovConnects* is embedded within Customer Services and *100% Digital Leeds* is part of the Integrated Digital Services.
- *Size of local authority.* Leeds a substantially larger city than Coventry (with a population over double in size), with a greater proportion of LSOAs in the 10% most deprived nationally. Both cities were discussed as having very diverse communities (particularly in terms of ethnicity and deprivation), that are physically close together, in mostly urban settings.

Similarities between the *100% Digital Leeds* and *#CovConnects* programmes suggests core structures are replicable across programmes and adaptable to place. These programme commonalities will be discussed further in the following section (sect. 3.4) on the Common ToC.

It is important to note that results presented are based on data collected between May and July 2023. Since then, both programmes have continued to grow and develop.

3.4   Common Theory of Change (ToC)

The draft Theories of Change (ToC's) produced for individual case study sites were combined by the research team into one proposed common ToC that could be used to explain a generic local authority-led, city-wide digital inclusion programme. This draft common ToC was then discussed and revised by stakeholders from *100% Digital Leeds,* and *#CovConnects* during Workshop 3 (see Appendix 2). The main causal pathway (ToC) and a more thorough

understanding of the specific activities and processes that produce the desired changes (Theory of Action) were then produced.

3.4.1 The main causal pathway

A local authority-led, city-wide digital inclusion programme is likely to operate in the context of various digital inequalities ('**city context**'). Inequalities could be between places and neighbourhoods or different demographic groups. While there are likely to be reoccurring inequalities between places, each city is likely to have its own inequalities that reflect its history and culture.

The ultimate aim of a local authority-led, city-wide digital inclusion programme is to improve residents' quality of life (presented as a community '**outcome**' in the ToC, see Appendix 3). This reflects a view that digital technologies should be used to improve peoples' lives in ways that are meaningful for them. Increased 'digital inclusion' is included but only as an intermediate outcome. A distinction is also made between the digital inclusion of organisations (highlighted in blue in the ToC) and individuals (highlighted in orange) as these occur through separate processes. That is, individuals' and organisations' skills, motivation, and confidence to use digital technology are improved through a digital inclusion programme as a means of enabling services to work better (organisations) and to give people more control over their lives (individuals) (see Figure 2).

Increasing the effectiveness of services and systems is multidimensional. It can be about services being better at enabling individuals to be more digitally included *per se* via improved access (e.g. device lending), skills (e.g. delivering training), confidence (e.g. providing support to get online), and motivation (e.g. providing online services). More effective services can also be about delivery partners using digital technology to work more efficiently in general (and support other agendas), thus saving resources for frontline delivery. While increasing service effectiveness can be done through 'upstream' work to make digital tools, services, apps, websites and technology more accessible and intuitive, it is mostly achieved through 'downstream' work with organisations on the ground and in communities.

Increased digital inclusion and empowerment and control for individuals is shown as a tangential pathway in Figure 2. This reflects how local authority-led, city-wide digital inclusion programmes mainly work with delivery partners, helping them to be more digitally included and improve their existing services or design new ones. This, in turn, enables delivery partners to support their communities more effectively. Local authority-led, city-wide digital inclusion programmes have relatively little direct contact/engagement with residents, as indicated by the dotted line.
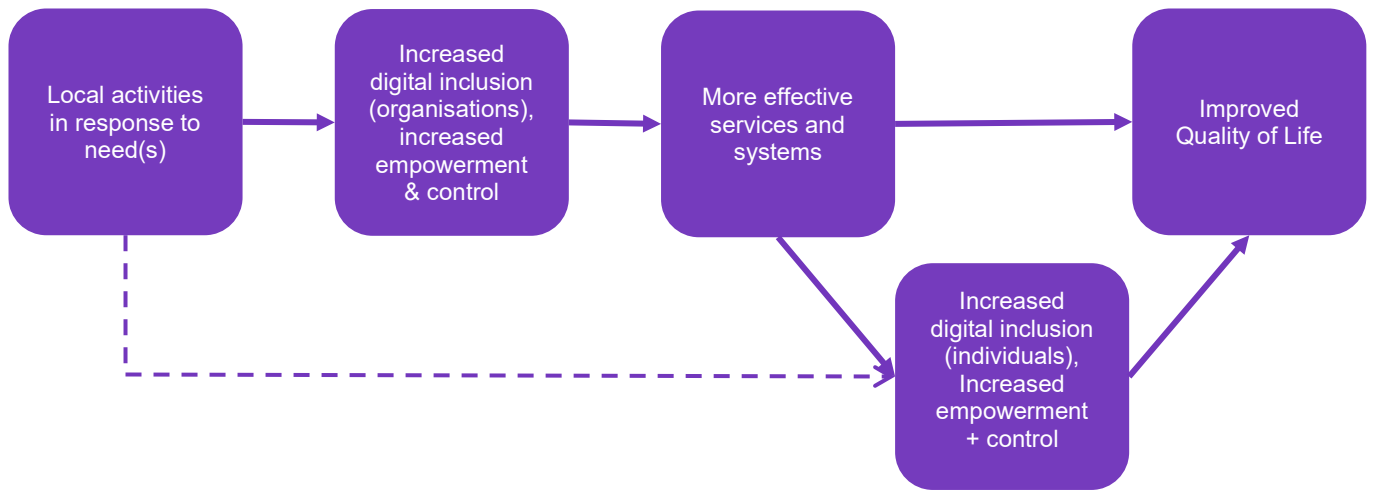
Figure 2 The main causal pathway of city-wide, local authority-led digital inclusion programmes

3.4.2 Specific activities and processes of city-wide, local authority-led digital inclusion programmes

The full picture of how a city-wide, local authority-led digital inclusion programme operates is more complicated. Programmes are affected by, and must be responsive to, the context in which they operate. This includes both the things happening in the real-world ('**city context'**), like macro socio-economic issues, city demographics, and existing infrastructure, and organisational issues within local authorities ('**organisational context**'). Where there is support for a digital inclusion programme from leadership, a clearly understood focus and purpose to the programme, and where connections can be made to other agendas/priorities, then this programme is more likely to flourish. This also connects to funding of programmes; where long term funding can allow programmes to address present needs of communities, develop programme (brand) awareness and trust, and plan for future growth and change.

There are '**ways of working**' – an ethos or set of values – identified in the ToC that also enable local authority-led, city-wide digital inclusion programmes to flourish. These are as follows:

- Providing a personalised service, rather than a one-size-fits-all approach.
- Working with delivery partners to co-produce solutions. This involves accepting that these partners are the experts on the communities that they work with. A digital inclusion programme is there to provide expertise around digital technology.
- Accepting, and working with, the complexity of digital inclusion. That is, accepting that an activity will not necessarily directly lead to the desired outcome straight away but forms part of a set of interconnected activities.
- Appreciating that digital inclusion-based activities are developmental and iterative. Becoming 'digitally included' is a journey for organisations and individuals/communities and the programme is there to assist them along the way.
- Working with partners voluntarily, and not providing conditional support that could be withdrawn.
- Targeting support to organisations and communities where it is most needed. This reflects that the barriers to digital inclusion are not evenly distributed and that some communities are at greater risk.
- Adopting an evidence-based approach, where possible. This includes tacit knowledge built and shared through experience or seeking out formal research evidence about 'what works?'.

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The ways of working for a local-authority-led, city-wide digital inclusion programme are implemented via three main '**activities/actions**':

- Working with delivery partners to: deepen their understanding of digital inclusion/exclusion and the role they could play to increase digital inclusion for their communities; co-produce plans for augmenting existing services or develop new services; help partners understand how they could use digital technology to increase digital inclusion; facilitate access to training and other resources; signpost and connect partners with other organisations; and support funding applications.
- Building partnerships with actions/activities to increase connections between stakeholders in the city. This can be through formal networks and building more informal, localised partnerships with and between partner organisations in response to specific needs. Building partnerships and networks with organisations outside of the city is another component.
- Driving change for a place is about leading digital inclusion at a city-wide level; being the face and voice of digital inclusion. Specific activities can include: advocating/championing a digital inclusion agenda within the local authority and with partners; making connections between organisations and agendas; sharing best practice and new insights; and leading city-wide initiatives (e.g. device banks, grant funding, events).

Across all three of these strands, it appears that, as digital inclusion programmes mature and become more established, they move from active involvement to assuming a more strategic and consultancy role with the organisations and teams they work with.

In terms of digital inclusion programme '**outcomes**', there is a great deal of complexity. Improved quality of life (of individuals/communities) is thought to be the ultimate aim of these programmes but there are many interconnected intermediate outcomes on the way to this. Outcomes are organised into those for individuals/communities and those for organisations. For individuals/communities, outcomes are mainly achieved via improvements in services provided by delivery partners (e.g. VCSE organisations working in and with communities). This can lead to improvements in individual digital inclusion, which can empower people to improve various aspects of their lives (e.g. employment, access to healthcare, community participation, etc) and/or their relationships with services, which results in their improved quality of life.

Alternatively, improved service delivery can directly improve social determinants of health and wellbeing and/or relationships with services, also leading to improved quality of life (this pathway misses out individuals themselves becoming more digitally included). A direct pathway from local authority-led, city-wide digital inclusion programmes to improved digital inclusion for individuals also exists via their 'driving change of the place activities'. This includes things like device banks, whereby individuals can improve their access to technology, or community events where individuals can get more information about how and why to use technology.

For organisations, the central intermediate aim is 'improved delivery'. This concerns how effectively they are delivering services in support of community need. This is multidimensional and could mean improvements in one or more domains (e.g. quality, accessibility, capacity, efficiency, etc.). As described above (sect. 3.4.1), this is a central point of the whole programme; the digital inclusion programme helps partner teams and organisations know how to use digital technologies and this helps improve their offer to support community need and, therefore, increase individuals' digital inclusion. Subsequent outcomes are expected to be 'financial savings' for organisations and 'reduced inequalities' of all kinds. Reduced

inequalities were originally given as an individual/community outcome. However, it was agreed that reducing inequalities is an outcome that organisations and systems (e.g. public health) are concerned with; individuals are more concerned with their own quality of life.

Before delivery partners can improve their services, they first have to increase their skills, access, motivation, and/or confidence to use digital technology in their activities. They do this mainly through collaboration with the digital inclusion programme but also through becoming part of networks where they can learn from peers and other organisations (in the city and externally). In the same way that digital inclusion is thought to be a way of empowering individuals to improve their living situation, organisations becoming more digitally included involves them becoming more empowered to decide how to change their offer to communities.

There is a pathway through organisations gaining more funding and resources, including money and access to technology. This can be achieved through the local authority-led, city-wide digital inclusion programme directly distributing resources that it has gained (e.g. device banks, grant funding) or through helping delivery partners bid for external resources. Extra resources support organisational sustainability (an organisational '**outcome**'), which leads back to improvements in service delivery – either through reinvesting extra resources or by ensuring that services can be maintained.

It is important to acknowledge that local authority-led, city wide digital inclusion programmes aim for better or improved outcomes across a wide range of factors, these may differ across organisations and places to meet the needs of specific communities.

3.5   Evaluation

As well as understanding how a city-wide, local authority-led digital inclusion programme works (Obj.1), this project also looked at ways of measuring and evaluating the value and impact of such a programme (Obj.2). Current and potential approaches to evaluation (in *100% Digital Leeds* and *#CovConnects*) were discussed in workshop 3. Six 1-1 interviews were also conducted about evaluation with stakeholders across both case study sites. These were with two front-line staff (digital trainers) and two managers from third sector organisations, one city council employee and one senior manager from a regional governmental body. The key points are summarised in this section.

3.5.1   General views of evaluation and key issues

Evaluating local authority-led, city-wide digital inclusion programmes was universally thought to be necessary and useful for understanding the strengths and weaknesses of these programmes and for making improvements. Evaluation results can also be used to evidence the effectiveness of programmes to funders and decision makers.

The multidimensional nature of many of the key concepts involved in these programmes – digital inclusion/exclusion, quality of life, empowerment – provides both opportunities and challenges for evaluation. These are summarised in Table 1.

Table 1. Opportunities and challenges for evaluation

	Challenge for evaluation	Opportunity for evaluation
Diverse metrics	The use of diverse metrics across interventions/ programmes limits the possibility for direct comparisons at different timepoints and/or with different programmes.	The diversity of metrics means that different measures and proxies can be used to assess the effect of programmes in different domains.
Lack of complete measures	Concern is evident regarding the lack of 'complete' measures of key concepts, particularly digital inclusion/exclusion. It was suggested evaluations often measure particular domains of digital inclusion/ exclusion rather than the concept in full.	The use of multiple indicators to measure the different domains of digital inclusion/ exclusion.
Attributing cause and effect	The inherent complexity of local authority-led, city-wide digital inclusion programmes means that it is very difficult to attribute cause and effect, particularly about outcomes that have been through multiple intermediate outcomes/pathways. There can be lots of potential interference from other interventions happening simultaneously (confounding factors).	There may be opportunities in combining 'key performance indicators' with other programmes to say, for example, "we have these programmes that all contribute towards X outcome, and this is the effect they have had". However, this may not be persuasive when it comes to allocating scarce resource to specific programmes each financial year.
Time delay	There is probably a delay between when an intervention(s) occurs and when outcomes are achieved. For example, someone may take part in a digital skills training course hosted by a delivery partner and supported by the digital inclusion programme, but the individual might not see any benefit to their living standards for many months until, perhaps, they are able to apply online for a new job. This means that evaluation done too early risks missing key learning.	There may be an opportunity to identify key programme themes for long-term measurement.
Scale of data collection	The challenge is knowing at which scale to collect data. Data collection could look across the whole of a local authority-led, city-wide digital inclusion programme, which might necessitate using city-wide metrics. Data collection could, instead, focus on individual projects carried out as part of an overall programme (e.g. assessing the support provided to individual delivery partners).	Those spoken to talked about the value of local case studies and qualitative stories to capture learning and, importantly, convincing decision makers and funders of programme value.
Burden of evaluation on delivery partners	There is a challenge that a lot of burden of 'doing' evaluation will fall to delivery partners. A potential complication of this is that the collaboration between the digital inclusion programme and its delivery partners is voluntary. Whilst this is beneficial for project delivery, it means there is no obligation for partners to engage with evaluation. Whilst they may be experienced in doing evaluation as a condition of grant funding, it is perhaps overly invasive to ask them to do more tailored evaluation activity for the digital inclusion programme.	Opportunities may occur, however, to make data collection for evaluation as simple as possible and utilise/repurpose the data that partner organisations already collect for other evaluation/monitoring.

3.5.2   Current approaches

In Workshop 3, current approaches to evaluating *100% Digital Leeds* and *#CovConnects* were mapped to the draft programme Theory of Change (ToC) (Appendix 2). Both Leeds and Coventry programmes undertake a diverse range of evaluation and monitoring activities. Beyond exploring the specific evaluation methods, the aim of the Workshop 3 discussion was to understand any trends in the outcomes and causal pathways that were being evaluated or not.

Current approaches to digital inclusion programme evaluation in Leeds and Coventry are reflective of the challenges associated with evaluation described above (sect. 3.5.1).

Most evaluation aligns to the various intermediate outcomes of the programme. Case studies describing the broad impacts of the programme on individuals and partner organisations are used. A significant amount of current evaluation and monitoring relates to programme 'actions and activities' and are measures of capacity building. This includes counting/monitoring the numbers of, for example: devices distributed, residents attending events, delivery partners attending training, delivery partners worked with, digital inclusion officers appointed in delivery partner organisations, and hours of delivery inclusion services offered by delivery partners.

There is a theme of evaluation activity around the financial impact of city-wide, local authority-led digital inclusion programmes. This has looked at recording the total amount of money coming into the city that has been applied for by the digital inclusion programme directly or that it has supported delivery partners to apply for. The cost-savings of pro-bono work and value of in-kind support provided by businesses and other civil society organisations to delivery partners has also been counted as a measure of financial savings.

3.5.3   Potential evaluation

There is an aspiration to evaluate local authority-led, city-wide digital inclusion programmes as a whole and assess their total impact across all stakeholders. Being able to succinctly put a value on a programme's contribution, such as with a social return on investment (SROI), is desirable. However, efforts to do this so far have been unsuccessful, due to the complexity of the causal pathways within place-level systems from programme activities through intermediate outcomes to final outcomes. Evaluation has, instead, had to focus on discrete programme elements.

The proposed ToC can be used to guide an evaluation of a local authority-led, city wide digital inclusion programme; efforts can be planned to strategically assess the identified causal pathways and programme outcomes. As identified by Rutter et al. (2017) when looking at a complex systems model of public health, consideration should be given to the different processes and outcomes at all points in the programme that may act as levers to drive change. The ToC can also be used to explain how apparently disparate evaluation activities contribute towards greater understanding of a whole programme. However, it has not yet been possible in this project to identify specific metrics/sources of data that could be used in an evaluation, this must be co-produced at place-level with stakeholders to consider what not only would be useful but also feasible. The complexity of city-wide digital inclusion programmes and the open-endedness of programme activities is a significant challenge. Such a complex approach will require a broad spectrum of methods to evaluate.

Guidelines for a digital inclusion programme evaluation are as follows.
- *Evaluation that the inclusion programme can do/evaluation that involves delivery partners:* At a practical level, there is a distinction between evaluation activity that the digital inclusion programme can organise and that which requires delivery partners to

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be involved. Evaluation activity organised by the digital inclusion programme may involve delivery partners as participants/respondents (e.g. completing a survey) but not in helping to collect data (e.g. completing surveys with service users/community members). Being aware of this distinction helps mitigate the risk of evaluation being excessively burdensome on delivery partners. Evaluation activity that more heavily involves delivery partners should be negotiated at the beginning of co-production activities.

- *'Digital inclusion' is an intermediate outcome:*– In the ToC, 'digital inclusion' for delivery partners and individuals is a necessary part of the causal pathway. It is therefore reasonable (although not essential) to include measures of digital inclusion as part of the assessment of digital inclusion programmes. Due to the complexity of the concept, there are no measures of digital inclusion that are both complete (e.g. that totally capture the complexity of what is happening) and universally accepted (like other complex concepts). Rather a dashboard of measures that look at the different dimensions of digital inclusion (e.g. access, skills, confidence, motivation) is needed to give an indication of the programme effect. This dashboard of measures (using existing indicators where possible) should be co-produced with programme stakeholders to ensure its relevance and suitability to increase potential use.

    In order to understand the dynamic of digital inclusion further, it would be useful to map when improvements in measures of digital inclusion do, or do not, align with improvements in other outcome measures posited to be further along the causal pathway.

- *Focus on empowerment/control*: In the ToC, increased digital inclusion may lead to individuals and organisations feeling more empowered to use digital technology; i.e. they gain more control of how they use technology to do things that are important to them. Empowerment to use digital technology is therefore a potentially standardisable variable that could be assessed across all programme activities through the development of qualitative case studies and validated survey instruments. Whilst there are validated instruments to measure empowerment/ control in a general sense and related concepts such as locus of control beliefs (e.g. *Pearlin and Schooler's Mastery Scale)* and self-efficacy (e.g. *The General Perceived Self-Efficacy Scale*), more specific tools relating to the context of a digital inclusion programme evaluation may need designing and validating. It is also suggested to gain an adequate measurement of empowerment as a programme outcome and driver for change, a mixed method approach is needed (Cyril et al., 2016). As above, it would be useful to observe whether improvements in measures of sense of control or empowerment to use digital technology align with improvements in quality of life and other relevant outcomes, such as employment.

- *Focus on Quality of Life*: The ultimate aim of a digital inclusion programme is thought to be to improve Quality of Life (QoL) for residents. There are various validated instruments to measure QoL (e.g. *Quality of Life Scale*) and related concepts like individual wellbeing (e.g. the *Warwick Edinburgh Mental Wellbeing Scale*, the *Personal Wellbeing Index,* the *ONS4*), financial wellbeing (*InCharge Financial Distress/Financial Well-Being Scale*) and happiness (e.g. the *Depression-Happiness* Scale). This is one measure that could be used as part of evaluating a programme's activity (alongside more project specific measures) to provide a point of comparison between activities, over time, and with other research evidence and representative data sets (e.g. Census, British Household Panel Survey, Community Life Survey). It

may also be possible to compare programme activities to local datasets about QoL/wellbeing that may be collected by health-focused colleagues in Public Health and the NHS, such as the Fingertips dashboard tools.

- *Focus on organisational outcomes, including organisational capacity, service delivery, and sustainability:* A significant proportion of the work of digital inclusion programmes is with delivery partners and delivery partner outcomes are therefore an essential part of multiple causal pathways. 'Improved service delivery' can be operationalised in many ways, including (but not limited to) organisational capacity, financial health/sustainability, service quality, and Key Performance Indicators (KPIs) being met. As with all aspects of this evaluation framework, balance is needed here between applying standardisation across all delivery partners and tailoring approaches.

- *Qualitative stories and case studies:* Qualitative stories and case studies are highly effective ways of describing an individual or organisation's 'journey' that transcend multiple causal pathways and outcomes (Green et al., 2022). Used to complement more specific (numerical) measures, they can capture the inherent complexity of digital inclusion programmes. By themselves, though, they may lack generalisability and reliability and so should be used sparingly and for a particular purpose.

- *More robust evaluation designs (where possible):* To get closer to understanding (and evidencing) the causal effect of a digital inclusion programme, or to produce a Social Return on Investment (SROI), requires more robust evaluation design. This includes using designs where data is collected at multiple time points, such as a pre-post experimental design or a long-term cohort study (i.e. with a repeated annual survey), and where control groups are utilised. However, such designs are challenging in the real-world settings in which digital inclusion programmes operate - particularly with respect to controlled trials, which are 'gold standard' particularly in health research. These would also require additional resources and inevitably be more burdensome for delivery partners (either being participants themselves or helping to set up 'experiments' and collecting data from service users/community members).

4 Summary and recommendations

Addressing digital inequality is a global, national, and regional policy priority because of the significant adverse impacts digital exclusion can have on individuals and communities.

The aim of this research is to understand how local authority-led, city-wide digital inclusion programmes contribute towards addressing digital inequalities at a city-wide level and how this impact can be measured. A case study methodology – focusing on *100% Digital Leeds* and *#CovConnects* – was used to produce a common ToC and evaluation guidelines. Learning from this project supports the transferability of knowledge and experience between local authorities and the effective development of further local authority-led digital inclusion programmes.

The primary aim of a local authority-led, city-wide digital inclusion programme is to support people and organisations in becoming more 'digitally included' and thereby improving the quality of life of individuals and communities. The common ToC highlights proposed causal pathways for various programme outcomes and mechanisms to support change at different points in the programme. The main causal pathway is for digital inclusion programmes to increase digital inclusion at an organisational level so that delivery partners can more effectively support community needs. To achieve this, digital inclusion programmes must collaborate with delivery partners, build local and national partnerships, and drive change at a place-level. Working collaboratively with partners, targeting support to areas/communities with the greatest need and working with the complexity of digital inclusion/exclusion are part of how such programmes are delivered. City-wide, and broader, socio-economic factors and organisational contexts affect how these programmes are delivered. Similarities between how these digital inclusion programmes are delivered (e.g. VCSE organisations delivering tailored support to communities and partnership working) and recommended ways of working to address wider determinants of health (Locality et al., 2022; Gamsu et al., 2024) are evident, demonstrating good practice.

Evaluation of local authority-led, city-wide digital inclusion programmes is challenging; largely because they deal with multiple organisations running multiple programmes tailored to individual needs and because there are multiple causal pathways to consider. The proposed ToC (see Appendix 3), provides guidelines for potential evaluation, including: focusing on the impact on delivery partners; measuring 'digital inclusion' as an important intermediate outcome; incorporating new evaluation measures as they are developed; and using standardised measures for programme activities that are shared, such as to measure programmes' impact on quality of life. More robust evaluation designs, using mixed methods and multiple data sources, are needed to confidently evidence causal pathways.

A review of current literature relating to local authority-led, city-wide digital inclusion programmes reveals little or no knowledge or previous research in this area. The small amount of pre-existing evidence focuses on related but not directly relevant topics. These include: the increased digitisation of a city for commercial benefit in the United States of America (Wiig, 2016); a time-limited one-off project with a specific digitally excluded community (children from low-income families) in Amsterdam, The Netherlands (Dedding et al., 2021); and an analysis of a long-running city-wide digital inclusion programme, but without providing a ToC or any guidance for others to replicate, in Pirai, Brazil (Teles & Joia, 2011).

4.1 Recommendations
Based on the findings of this research, below are recommendations to support the development of existing and future local authority-led, city-wide digital inclusion programmes.

4.1.1 Policy

- Strongly consider the value of addressing digital inequalities, not as an end in itself, but for the contribution this could make across multiple agendas and as a tool for empowering individuals and communities, improving quality of life, making financial savings and reducing inequalities.
- Recognise that multiple interventions (for example a device bank, training to use digital devices, support to apply for jobs online), probably running simultaneously, will be needed to address the complex causes of digital exclusion, including the underlying socio-economic conditions that effect digital inclusion/exclusion.
- Provide secure funding for long-term action to address digital inclusion; including enabling local authority-led, city-wide digital inclusion programmes to coordinate local activity to drive change and to build capacity with delivery partners in the local voluntary and community sector.

4.1.2 Practice

- Recognise that a local authority-led digital inclusion programme requires evaluation feedback to learn and improve, and that sharing data and metrics can help increase knowledge.
- Strongly consider that expectations around delivery partners engaging with evaluation activity be built into collaborations with local authority-led digital inclusion programmes.
- Where possible, build in and plan evaluation activities at the start of implementing a local authority-led digital inclusion programme – based on an understanding of ideal pathways from actions to outcomes.
- Further develop practical toolkits that can be used to guide local authorities developing their own digital inclusion programmes, particularly a refined and tested evaluation framework that includes practical resources to guide evaluation.

4.1.3 Research

- Further testing and refining of the ToC is needed using different models and in varying contexts (for example, rural settings). A feasibility study/pilot trial of a full evaluation framework is needed to explore whether the proposed measures are appropriate to detect whether interventions have led to improvements in proposed programme outcomes.
- Further research is needed to identify a dashboard of metrics/tools that could be used to measure the identified programme impacts (recognising some programme outcomes may differ across programmes and contexts). This research would also involve identifying 'measures in common' that can be used by different local authority-led programmes and that should maximise cost savings and efficacy and allow for comparability over time and between places.
- Separate process evaluations are recommended to illuminate the success and challenges around programme implementation/delivery.

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6 Appendices

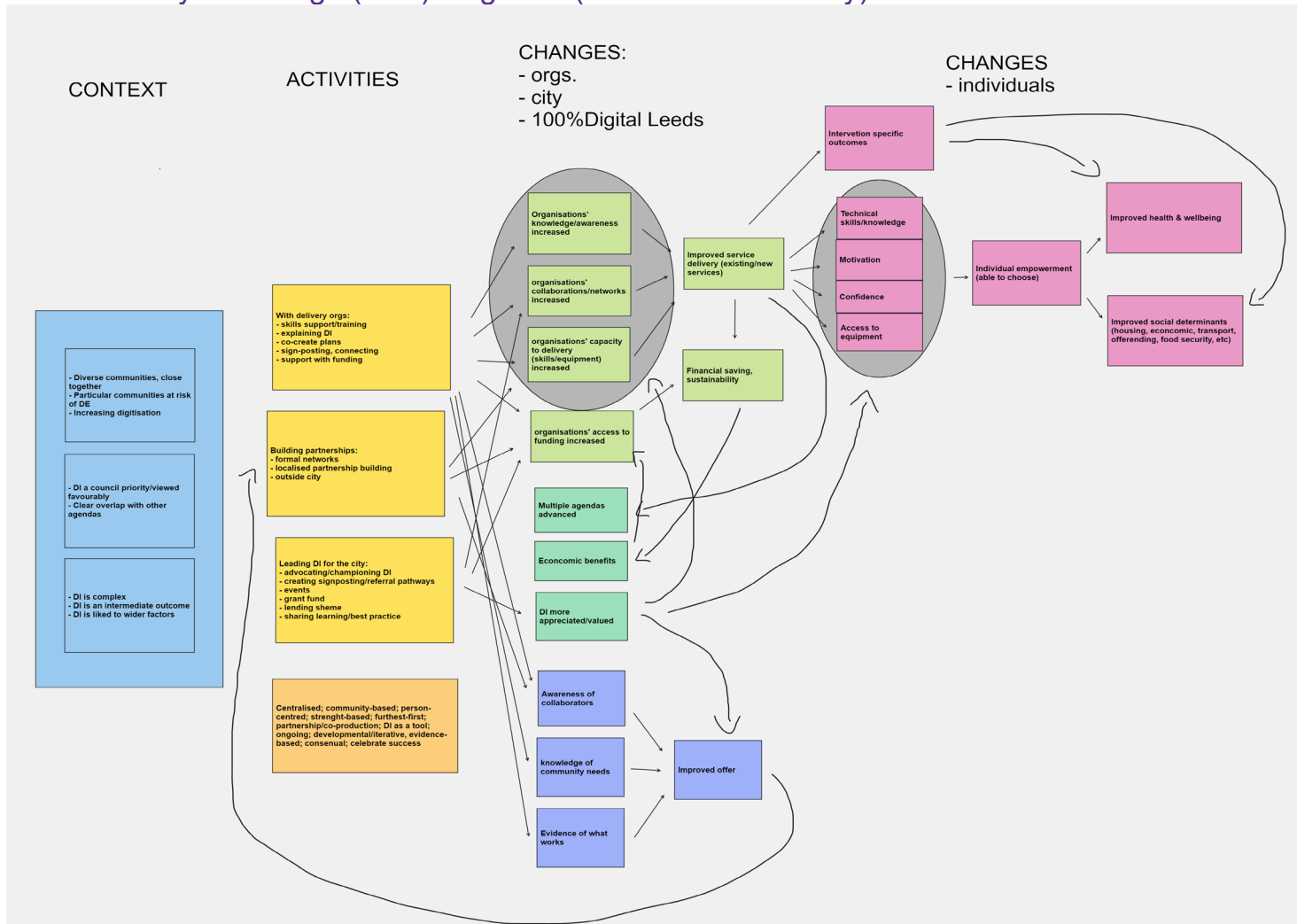## 6.1 Appendix 1 – Draft Theory of Change (ToC) diagrams (Leeds and Coventry)

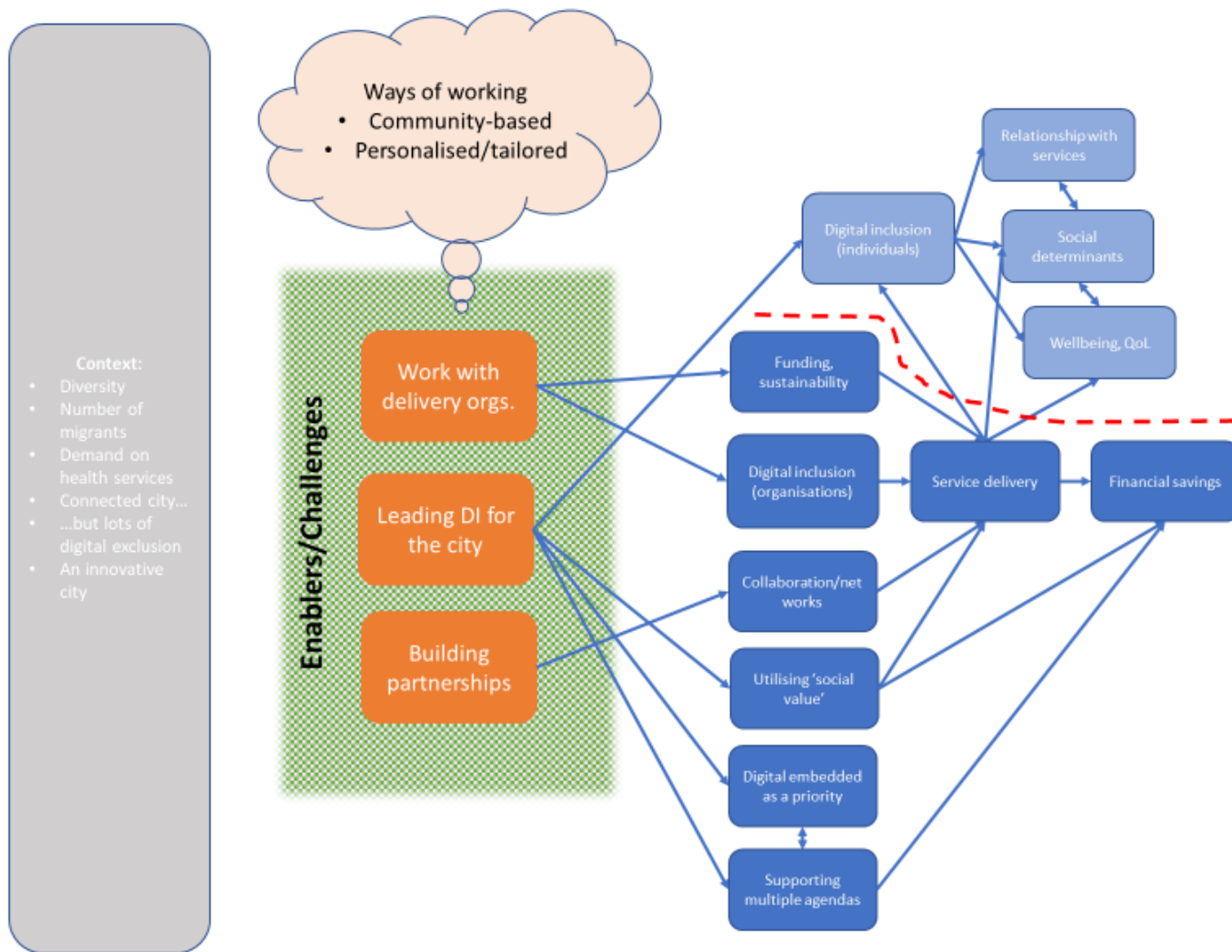*Figure 3: 100% Digital Leeds draft Theory of Change (ToC)*

Figure 4 #CovConnects draft Theory of Change (ToC)

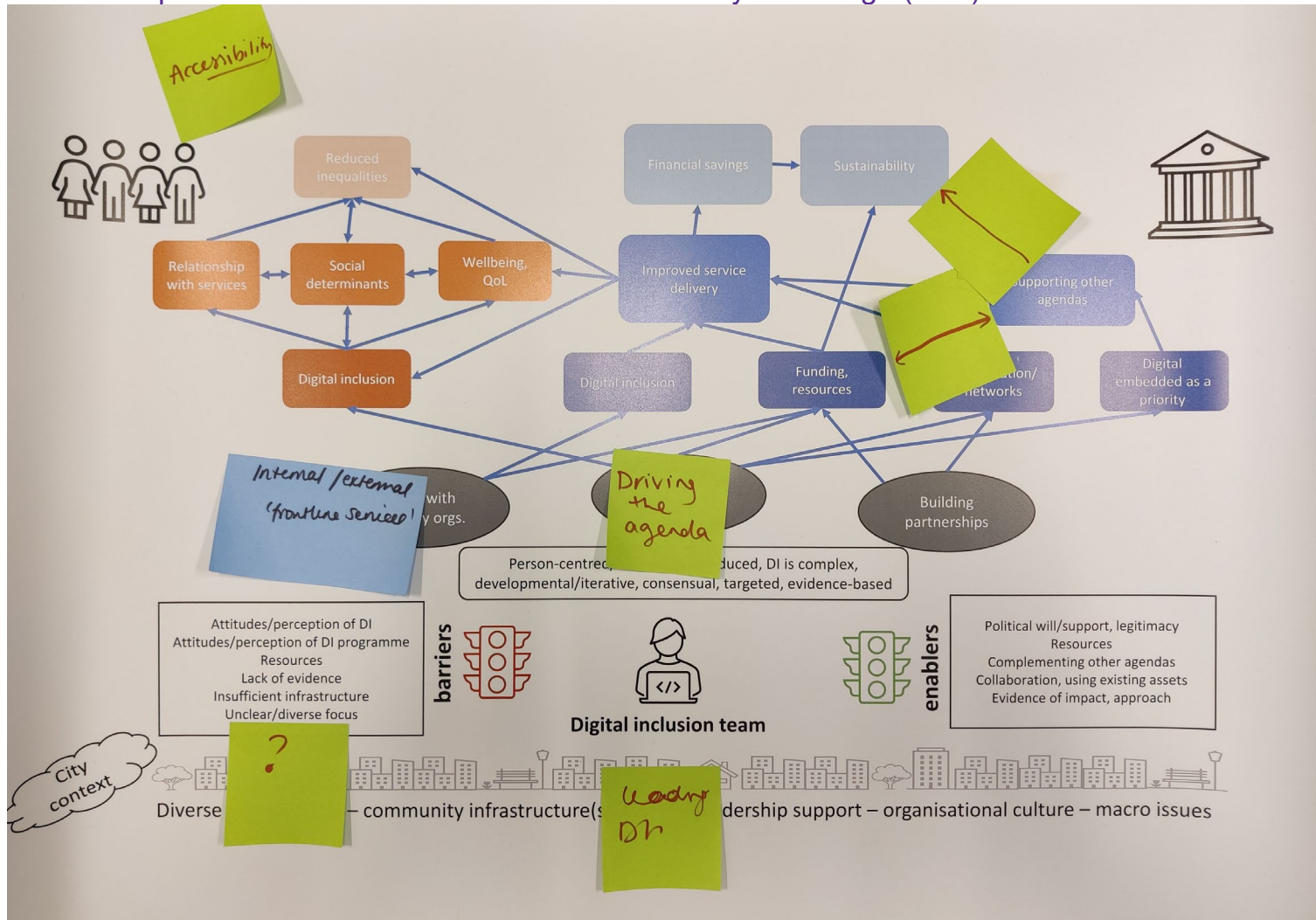## 6.2 Appendix 2 – Workshop 3 discussions about draft common Theory of Change (ToC)

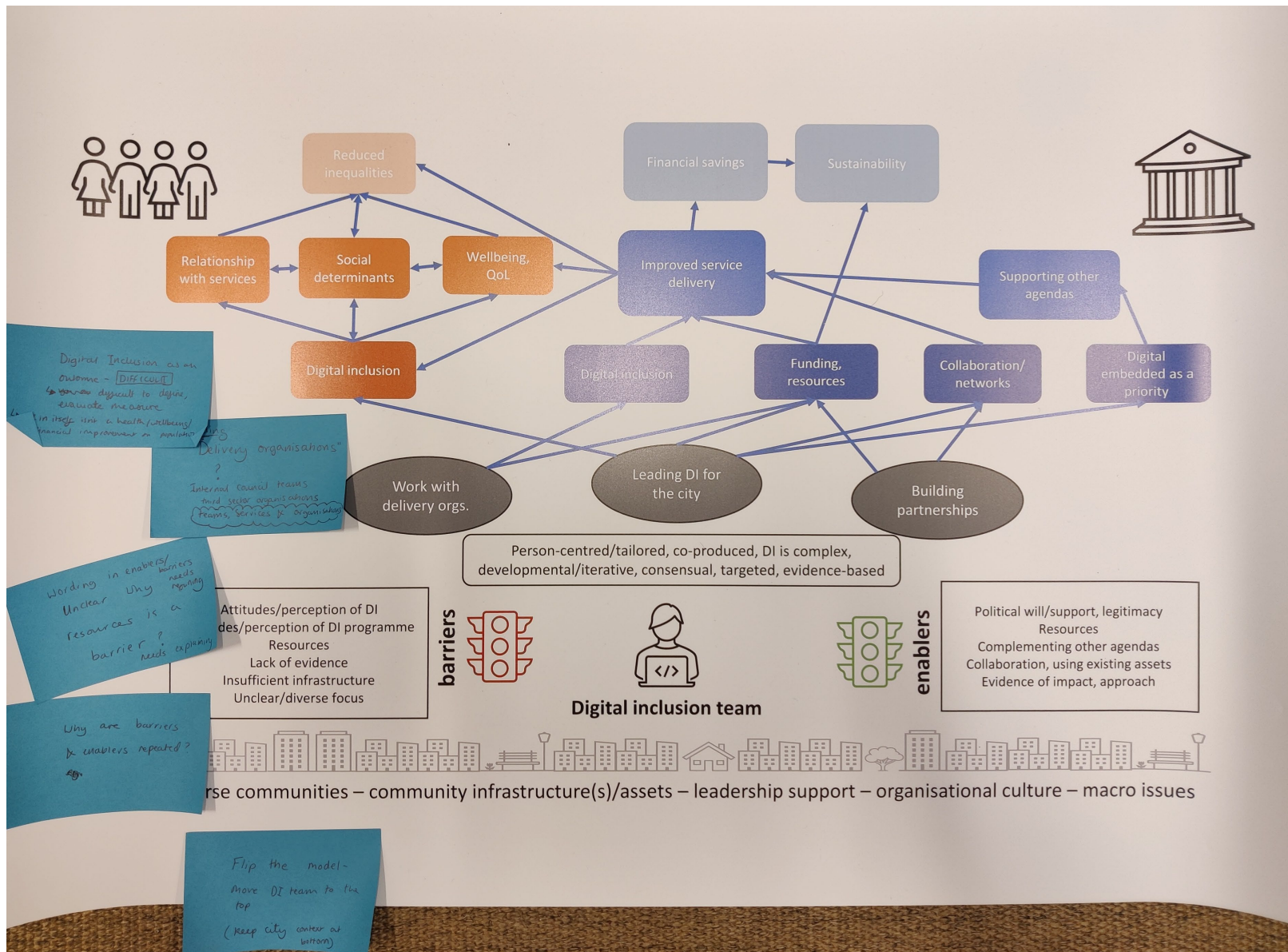Figure 5 Small Group 1 feedback on draft common Theory of Change (ToC)

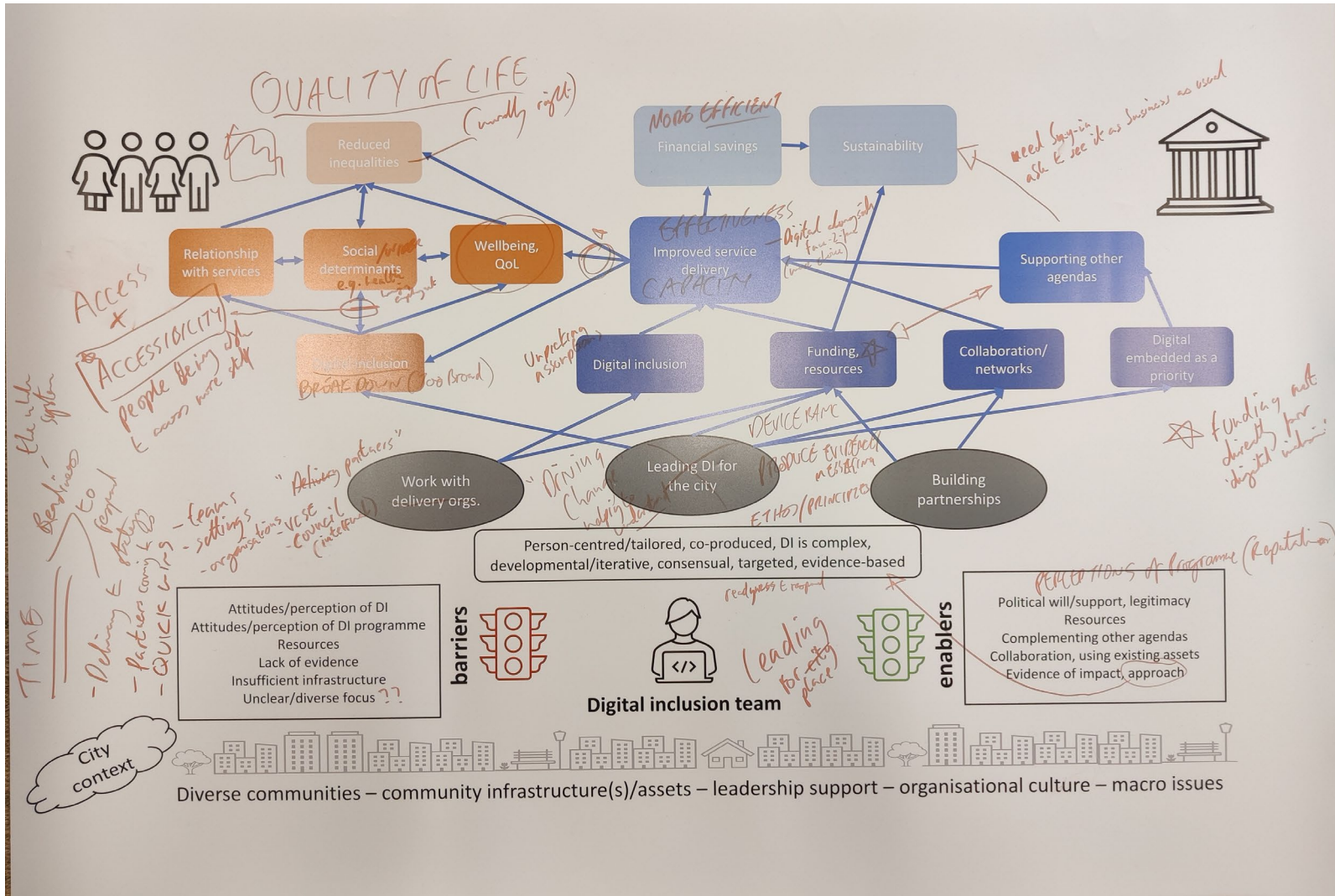*Figure 6 Small Group 2 feedback on draft common Theory of Change (ToC)*

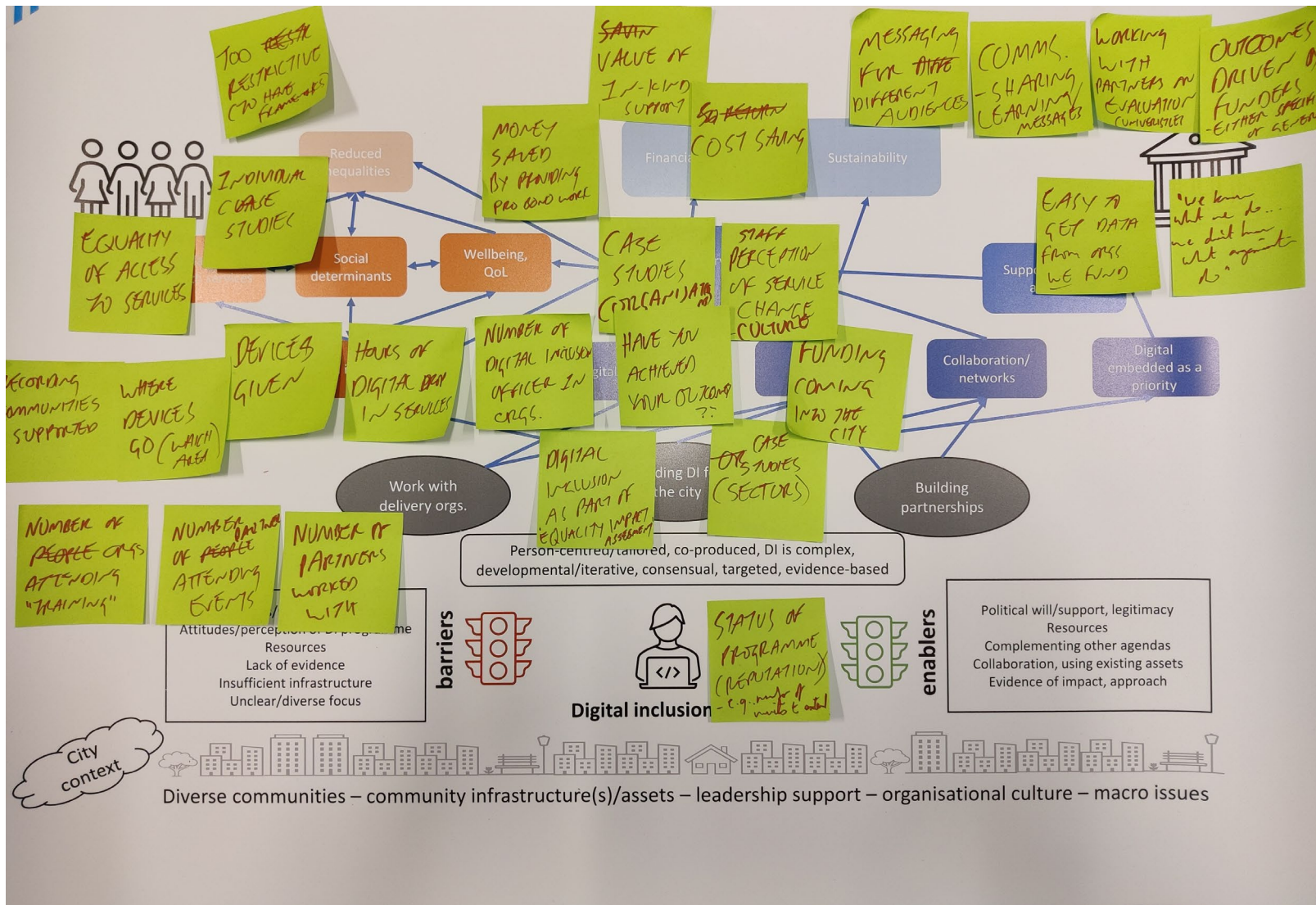*Figure 7 Whole group feedback on draft common Theory of Change (ToC)*

Figure 8 Whole group discussion about monitoring and evaluation approaches mapped to draft common Theory of Change (ToC)

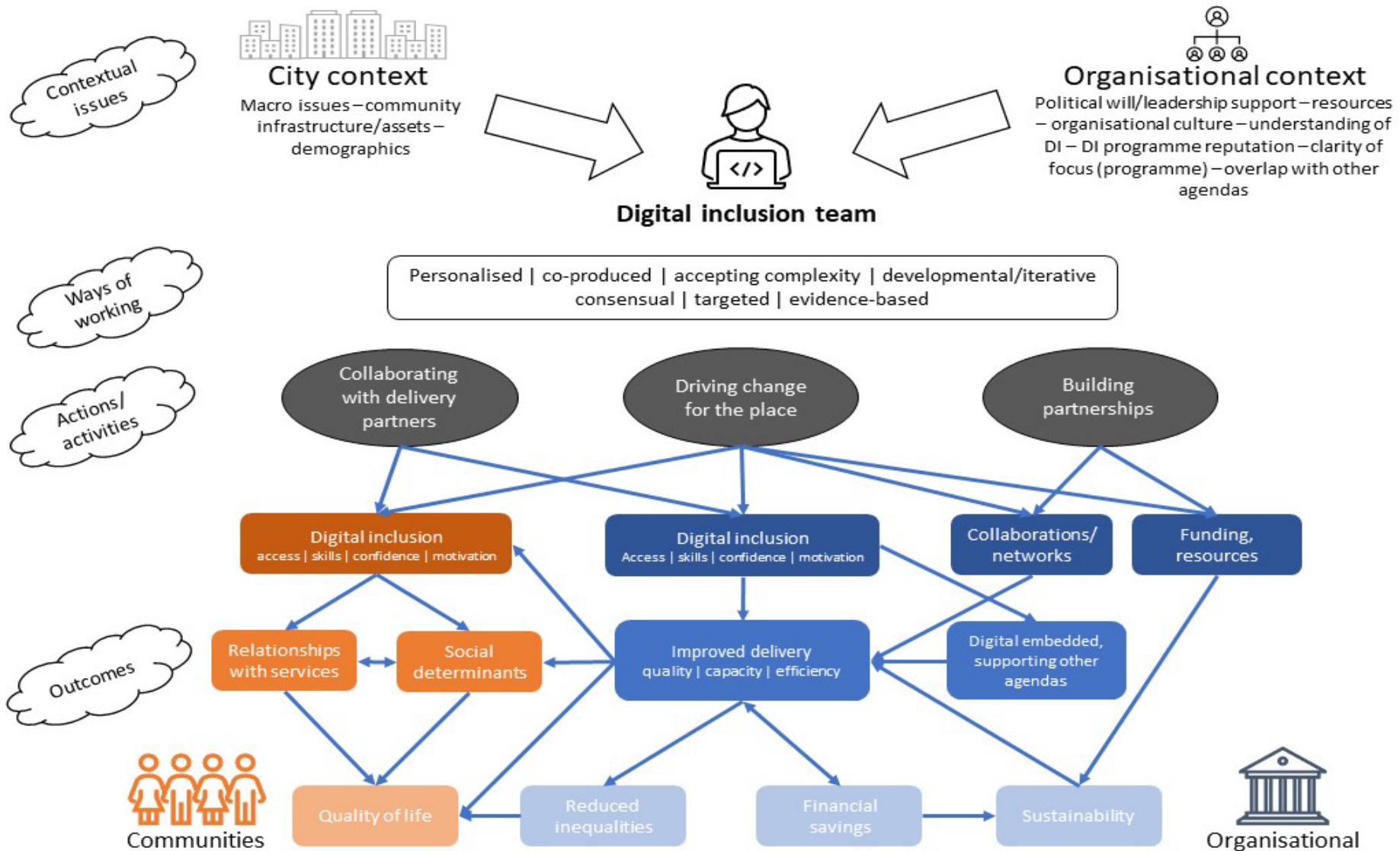## 6.3 Appendix 3 – Proposed Theory of Change (ToC)

Figure 9 Proposed common Theory of Change including specific activities and actions of a city-wide, local authority-led digital inclusion programme