A neighbourhood approach to digital inclusion of older people: trialling Behavioural Systems Mapping in five communities

Executive Summary

About the research

A neighbourhood approach to digital inclusion of older people: trialling Behavioural Systems Mapping in five communities was a project undertaken to explore how Behavioural Systems Mapping (BSM) can help councils and community partners design more effective, place-based strategies to improve digital inclusion for older people (aged 60+).

Older adults remain one of the UK's most digitally excluded groups, facing barriers such as low confidence, limited skills, accessibility challenges and lack of trust in technology. The project aimed to understand how BSM can be used to help teams create strategies and interventions that are better designed to overcome the systemic barriers to digital inclusion that older people in the UK currently face.

The funding and partnership

This project was funded by the Department for Science, Innovation and Technology Digital Inclusion Innovation Fund.

The partnership consisted of DG Cities, the Royal Borough of Greenwich, Haringey Council, Ealing Council, Leicester City Council, and North East Lincolnshire Council, with expert support from Dr Elise Crayton, Dr Lucy Porter, Dr Vivi Antonopoulou, Dr Ayse Allison on behalf of the Centre for Behaviour Change University College London.

Funded by: Department for Science, Innovation & Technology

About the authors

This report was written by Lara Suraci, Edward Houghton, Leanne Kelly, Gabriela Mihaylova, and Karolina Majkowska.

Acknowledgements

We would like to thank everyone who participated in the BSM process and shared their expertise and experiences on digital inclusion in the neighbourhoods, and the London Office of Technology and Innovation who supported the development and delivery of this project. We are also very grateful to those who provided feedback on the methodology, both during the workshops and in follow-up discussion.
This report was shaped by the contributions from the BSM process and with inputs from across the partnership. The discussions and reflections shared by partners and participants were invaluable in improving our understanding of not just digital inclusion but of the BSM methodology itself.

Recommended citation

Suraci, L., Houghton, E., Kelly, L., and Mihaylova, G., and Majkowska., K. (2026). A neighbourhood approach to digital inclusion of older people: trialling Behavioural Systems Mapping in five communities. Executive Summary. London: DG Cities. DOI: 10.6084/m9.figshare.32880992

Executive Summary

Overview

Older adults (aged 60+) remain one of the most digitally excluded[1] demographics in the UK, facing compounding barriers related to skills, confidence, accessibility, and trust. This exclusion severely limits their access to essential healthcare, welfare, and financial services. With the public sector rapidly moving towards digital-by-default models, as exemplified by the NHS 10-Year Plan's shift to digital-first Neighbourhood Health models, tackling digital exclusion has become an urgent, systemic priority. There is now a clear opportunity for neighbourhood and hyperlocal approaches that embed digital support in services and places people already know and trust, enabling support that reflects the abilities and motivations of people and to illustrate the opportunities that digital tools and services can bring.

Funded by the Department for Science, Innovation and Technology Digital Inclusion Innovation Fund, this project trialled Behavioural Systems Mapping (BSM) across five unique UK neighbourhoods to explore the method in practice, and to understand whether its use by public and third-sector teams could help local authorities and community partners design better place-based strategies to tackle digital exclusion.

The approach

Councils and key third-sector partners representing five neighbourhoods participated in a series of four workshops to develop a behavioural systems map of the digital inclusion system in their target neighbourhood. This behavioural systems map was used to develop a set of intervention blueprints; programmes and policies that could be developed further to tackle key behavioural barriers and enablers emerging from the mapping exercise. Complimentary geospatial analysis of geographic socio-economic data and location points and community engagement insights was undertaken where possible to provide contextual insights about the neighbourhood and to validate and improve the resulting set of intervention blueprints.

Key findings

The following findings highlight key actors, behaviours, as well as the systemic barriers and enablers to digital inclusion for older people. It also details the opportunities and constraints for interventions at neighbourhood level.

Both the findings and recommendations are presented for two distinct areas: substantive findings on digital inclusion, and methodological reflections on the application of the BSM method. Digital inclusion findings and recommendations reflect the rich data and insights brought together through the BSM process with participants. The methodological reflections draw on reflections captured during workshops and feedback from participants, facilitator insights from conducting the workshops, as well as semi-structured interviews with participants following the workshop series.

[1] Digital exclusion refers to individuals or communities who face significant barriers to using the internet and engaging online. The concept of Digital Inclusion describes policies, strategies and approaches to reduce digital exclusion and is defined in the UK Government's Digital Inclusion Action Plan (2025) as 'ensuring that everyone has the access, skills, support and confidence to participate in and benefit from our modern digital society, whatever their circumstances'."

Digital Inclusion

1. **Digital-by-default systems are advancing without coordinated digital inclusion support.** Across neighbourhoods, digital service delivery is progressing faster than the system's ability to support older residents. Responsibility for digital inclusion remains fragmented across local authorities, health services and VCSE partners, resulting in inconsistent user journeys and limited accountability for outcomes. Fragmentation and limited coordination are impacting an effective system response to digital exclusion.
2. **Systems lack iterative engagement mechanisms between lived experience and service design**. There are limited mechanisms to capture and act on user experience, reducing the system's ability to adapt existing services or establish new services that align with real needs.
3. **Digital exclusion of people aged 60+ is driven by interacting individual behavioural and system-level factors**. Individual-level barriers and enablers relating to capability (e.g. skills, knowledge, and understanding), opportunity (e.g. access to resources, time, and supportive environments), and motivation (e.g. beliefs and habits) frequently reinforce one another, but are also shaped by wider system conditions that drive persistent disengagement. It is important to view digital exclusion through both of these lenses simultaneously rather than in isolation.
4. **Informal support networks compensate for system gaps but can create inequity due to availability and accessibility barriers**. Older residents frequently rely on family, friends, neighbours and other informal, local support networks. While these networks currently fill crucial support gaps, availability of and access to them is often uneven and can furthermore reinforce dependency.
5. **Digital inclusion is shaped by local context, foundational conditions, and the relevance of support**. Geospatial analysis and community engagement contributed to BSM analysis of the unique contexts being mapped. While neighbourhoods differ significantly when it comes to which barriers are most dominant, digital exclusion is often rooted in the lack of trusted community spaces, limited local infrastructure, and low trust among older residents. Engagement has therefore been found to be more likely when support aligns with immediate needs and is delivered through trusted actors - highlighting the importance of tailored, place-based approaches.

Behavioural Systems Mapping

6. **BSM enables a structured diagnosis of complex challenges which encompasses both individual-level behavioural and system-level factors.** The method makes visible how actors, behaviours, and both systemic and individual drivers interact, providing a clearer and more holistic understanding of the system conditions that shape digital exclusion; including how barriers accumulate across services and collectively constrain pathways to digital engagement of people aged 60+.
7. **BSM revealed gaps in coordination, ownership and system readiness in the context of digital inclusion initiatives.** Mapping consistently identified unclear ownership of digital inclusion, fragmented delivery, and in some cases the absence of the infrastructure required to implement interventions. This was particularly apparent in cases where foundational assets (e.g. community centres or local libraries) were lacking or roles in the digital inclusion space were not clearly defined.
8. **BSM supports shared understanding and more coordinated action.** The participatory mapping process builds alignment across stakeholders, helping to identify priorities and opportunities for joint working, and enabling partners to better understand their respective roles within the wider system.
9. **BSM identifies actionable leverage points, but delivery depends on system capacity.** While effective at identifying where change could have impact, the feasibility of interventions is constrained by existing resources, infrastructure, and local readiness, meaning that some high-potential interventions are not immediately deliverable.
10. **The robustness of BSM outputs depends on the quality, diversity, and relevance of inputs.** Limited stakeholder diversity, lack of direct or indirect resident feedback, and gaps in baseline behavioural or geospatial data reduce the completeness of system maps and the strength of resulting interventions. This may particularly affect the ability to capture less visible or underserved groups of older residents that face the highest risk of digital exclusion.

Recommendations

The following recommendations set out implications for both digital inclusion practices and the application of BSM. The following recommendations set out implications for both digital inclusion practices and the application of BSM, based on the findings from this research trial. More detail on each is available in the Full Report.

Digital Inclusion

Recommendation 1: Local networks should be supported to adapt and deploy BSM within their neighbourhoods and communities and share learning to support further development and adaptation of the method.

This trial has highlighted that BSM can bring several key benefits to networks of key neighbourhood stakeholders, including increased connection and collaboration, recognition of the complexity of local digital inclusion systems, and a deeper understanding of digital exclusion. There are, however, improvements that need to be made to the methodology, which should be supported through an open and iterative approach to method design by community stakeholders.

Recommendation 2: Evaluation and impact assessment should be undertaken on policies and innovations that result from BSM.

This trial did not test the nature or quality of policies and interventions that resulted from BSM. Future trialling of BSM within the digital inclusion domain should incorporate extensive intervention impact evaluation - and where possible include comparative assessment against established methods.

Recommendation 3: Geospatial analysis and community engagement should form the basis of early work to define neighbourhoods and provide system-level insights to support BSM.

For BSM of digital exclusion in complex, place-based systems, we found significant value in triangulation and validation through the analysis of spatial data. Future work should look to incorporate spatial analysis earlier to inform and prepare for the Behavioural System Mapping. Community engagement also provides a valuable source of data on the lived experience of communities that can generate rich insights to teams using BSM. Future applications of BSM in the digital exclusion domain should look to incorporate up-front engagement and data analysis to provide insights which can inform and drive the mapping process. Doing so would mitigate against potential bias of those mapping, and could fill any information gaps or challenge assumptions before mapping begins.

Recommendation 4: Digital inclusion policy and funding should move beyond generic, skills-centric provision towards more holistic, locally tailored approaches that reflect the wider system of barriers people face.

The trial shows that digital exclusion is often not primarily driven by a lack of skills but by a combination of behavioural, structural, and contextual barriers, including low trust, limited awareness of support, accessibility challenges, and a lack of relevant entry points for engagement. Policy and funding should therefore prioritise approaches that build confidence and capability through trusted local actors - drawing on their deep knowledge of their local context and communities - relevant and motivating use cases such as healthcare, and ongoing, embedded support within community settings.

Recommendation 5: Future studies could establish connections with local partners and more formal information requests to allow for local data sharing.

While the current Information Request was valuable in sharing knowledge about the attributes of local assets and other key information, a standardised, formal Information Request to organisations beyond anchor institutions such as councils would ensure more granularity across all neighbourhoods. Data sharing through local community-based mapping may also be of benefit to researchers.

Behavioural Systems Mapping

Recommendation 6: Neighbourhood-level BSM within the public sector should utilise public engagement at every stage of the mapping process, integrating diverse non-expert perspectives throughout the methodology.

Public sector teams that participated in this trial took different approaches to public engagement, but all were clear on its importance to the method being trialled. Whilst the initial scope of this study did not include public engagement the resulting maps and intervention blueprints all benefitted from the input of older people. Further trials should explore the most effective ways to integrate community perspectives at different stages of the process.

Recommendation 7: BSM should be applied to clearly defined system challenges to ensure outputs remain actionable.

The trial found that system objectives were often ambitious and system boundaries were difficult to define. This contributed to the development of large and complex maps, which was further amplified by the fact that system objectives and boundaries were only sporadically revisited during the process. Future

applications of BSM should therefore prioritise early and strict definition of system objectives and boundaries, alongside structured opportunities to revisit and refine them throughout the workshop series.

Recommendation 8: BSM should be treated as an iterative process, with maps and interventions continuously refined as new insights emerge.

Behavioural System Maps are not intended to provide a complete representation of a system but rather to capture useful and actionable insights about key actors, behaviours and drivers at a given point in time. As such, static outputs risk becoming outdated or misaligned with real needs, particularly in complex and constantly evolving neighbourhood contexts. Future applications should therefore treat BSM outputs as living artefacts, with mechanisms in place to revisit and update system maps and intervention ideas over time.

Conclusion

This trial of Behavioural Systems Mapping (BSM) set out to understand whether BSM could contribute to understanding digital inclusion of people aged 60+ at the neighbourhood level. The findings demonstrate that BSM can be effectively used for this purpose, and provides clear added value as both a diagnostic and design tool for place-based digital inclusion.

BSM was shown to have significant potential value to neighbourhood stakeholders, and for some was considered a useful strategy and design tool with the added benefit of bringing stakeholders together to collaborate, build shared understanding and undertake important co-design work.

As a diagnostic, BSM revealed that superficially similar hyperlocal digital inclusion challenges are driven by distinctly different underlying behavioural systems, which was further emphasised when triangulated with geospatial analysis and direct community engagement. Insights were also specific to the 60+ cohort. We found established patterns of residents delaying or disengaging from digital services due to a compounding set of barriers including fear, poor service design, and fragmented institutional support from the private sector, NHS, councils and the third sector. Importantly, these behaviours are not solely driven by individual capability but by system-level factors that shape opportunity and motivation.

Key limitations of the method were noted: whilst BSM revealed stakeholder understanding of their neighbourhoods, validation through community engagement was often vital to test behavioural assumptions. In addition to this, when interventions were stress-tested, nuances emerged that were otherwise missing from the maps. The methodology also generated highly complex maps that at times were difficult for stakeholders to engage with, which may limit accessibility and scalability without further simplification or audience-specific tailoring of the outputs.

Overall, BSM appeared to generate actionable and targeted interventions that aligned with the needs of stakeholders and their neighbourhoods, particularly when supported by mixed-methods data and expert facilitation. Furthermore, BSM highlights that trusted and knowledgeable place-based actors and accessible service design play an important role alongside broadband speeds or device affordability. This suggests that digital inclusion policy and funding should move beyond generic, skills-centric provision towards holistic, place-based approaches that address the wider system of barriers and enablers that interact with hyperlocal factors; building confidence and capability through trusted actors, relevant use cases, and ongoing support. This trial shows that BSM is a tool that is well-placed to support this.

Declarations of interest: The authors declare the following interests: Edward Houghton is a Non-Executive Director of Public Voice CIC, a participant organisation in the project. Public Voice CIC had no role in the design, analysis or reporting of the project.

Image credits: Unless otherwise stated, all images in this report, excluding named figures and tables, were generated using the licensed DG Cities/Recraft AI image generation model. © DG Cities/Recraft.

Responsible publisher: DG Cities Ltd. With registered office at Building 1063 Cornforth Drive, Kent Science Park, Sittingbourne, Kent, United Kingdom, ME9 8PX.