

Technical paper: How to ensure inclusiveness and reduce digital divide?

Part of D2.2: Social innovation analyses to ensure fair transition

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Introduction - Breaking Barriers: Setting the Scene for Inclusivity

In today's Digital Age, technological advancements offer tremendous opportunities for progress and efficiency. However, these benefits are not evenly distributed, leading to a digital divide that excludes large population segments from accessing and benefiting from these technologies. Addressing this issue requires a comprehensive understanding of the factors contributing to inclusiveness and strategies to mitigate the digital divide. This paper presents an analysis conducted within the XGain project to explore perceptions of social inclusion in technology development. It offers insights into how to ensure inclusiveness and reduce the digital divide.

Method - Unraveling the Digital Divide Through Value-tree Analysis

A social innovation analysis was conducted using a Value-Analyses of Relative Importance (VARI) approach to investigate strategies for reducing the digital divide. This involved a mapping out strategy identifying and comparing factors contributing to inclusiveness through a value-tree framework. Experts from various disciplines participated in a workshop to discuss and prioritise factors relevant to the digital divide. The resulting value tree (see Figure 1) served as the basis for a questionnaire survey conducted with XGain consortium partners, where comparisons in pairs were used to assess the relative importance of different factors.

Figure 1 presents a detailed diagram showing various aspects related to reducing the digital divide and promoting inclusiveness. The diagram is organised into different sections, each focusing on key areas where investment is needed to address the digital gap. The first section emphasises the importance of investing in education, particularly in enhancing the technological skills of different groups, including government officials, users, and investors. Secondly, the Figure highlights the need for user-friendly technology and tools to make digital resources more accessible. The third key component in the figure stresses the significance of governance in promoting inclusion, covering aspects such as socio-economic conditions, governance of digital services, and public support. Lastly, there is a section on investing in digital infrastructure, which includes improving digital connectivity, affordability, and availability for all, especially vulnerable groups and those in rural areas. Figure 1 provides a clear framework for understanding and prioritising actions to bridge the digital divide and foster inclusivity.

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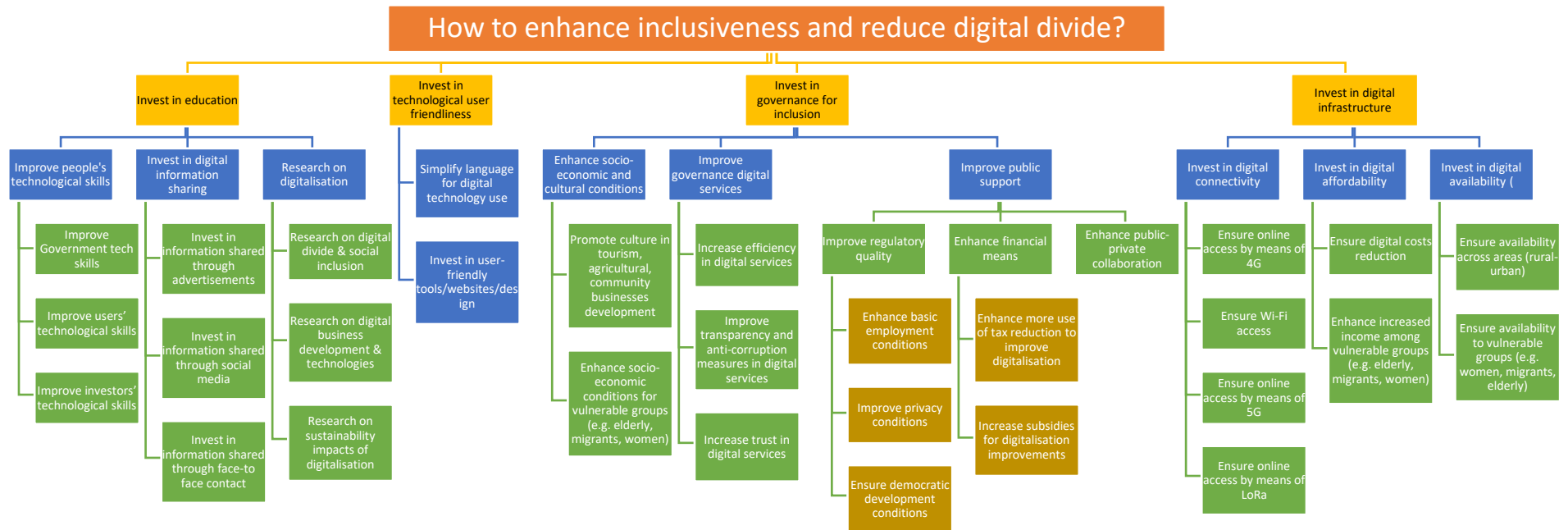


Figure 1: A value-tree of inclusion factors of digital divide (VARI)

Results - Findings through VARI

The analysis identified four main criteria for reducing the digital divide: investment in education, investment in technological user friendliness, investment in governance for inclusion, and investment in digital infrastructure. Each criterion was further specified into sub-categories to capture the multifaceted nature of inclusiveness and the digital divide. For example, investing in education included improving people's technological skills, investing in digital information sharing, and researching digitisation. Similarly, investing in governance for inclusion encompassed enhancing socio-economic and cultural conditions, improving governance digital services, improving public support, and enhancing public-private collaboration.

Conclusion - Bridging the Gap: Key Takeaways and Future Directions

The analysis highlighted the varying degrees of importance of different criteria across European regional contexts. While technological user-friendliness was estimated to be particularly important in the UK and Belgium, investments in governance for inclusion were prioritised in Austria. These findings underscore the need for tailored investment strategies to address the digital divide effectively. While the results are based on input from XGain project partners and may be influenced by their expertise and context, they provide valuable insights into the complexity of addressing inclusiveness and reducing the digital divide. Policymakers must recognise the diverse needs and challenges across different regions and adopt flexible and context-specific approaches to bridge the digital divide.

The main aim of XGain deliverable 2.2. is to explore how the digital divide has implications for digital sustainability in the European context by analysing: Issues and actors involved in the digital divide in a European context, as well as perceptions of; inclusion at the regional level in technology development; adoption of high tech among stakeholders (farm) level, and relevance and readiness across use cases in the XGain project. Five analyses are conducted in this deliverable, including a literature review on the digital divide, analyses of inclusion and readiness using VARI. Notably, reporting on the relative importance of all the criteria listed in the value tree can be found here. Moreover, the analyses of farmers' readiness to adopt and apply new technologies have been conducted in two cases (Flanders and Scilly Islands).

It is recommended that digital sustainability refers to technological, economic, environmental, social and societal sustainability. As for the policy analysis, based on the literature review, we conclude that there is a need for policies that combat digital inequalities, support better skills in using and adopting Information and Communication Technologies (ICT), and provide infrastructure which reduces socio-economic imbalances, and recognises the many-layered challenges involved, where access to the digital is important but not sufficient. Concerns for both digital environmental footprint and social risks require sustainable transition in technology development in the food and agricultural systems in pathways towards the Sustainable Development Goals (SDGs).

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