

## Technical paper: Balancing Readiness - Insights into Bridging the Digital Divide and Ensuring Inclusiveness

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

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### Introduction - Understanding Readiness for connectivity

The Digital Age brings forth not only technological advancements but also an imperative for inclusivity and sustainability. As we navigate through this era, it becomes evident that readiness to contribute to digital sustainability encompasses more than just technological preparedness. Economic, environmental, social, and societal readiness levels are equally vital. This article introduces the concept of "Balanced Readiness," integrating these five dimensions to inform institutional adoption strategies. Through a Value-Analyses of Relative Importance (VARI) approach, readiness levels are assessed across various use cases in the XGain project, leading to the development of a Balanced Readiness Level (BRL) framework.

### Method - A Value-tree for digital divide

A social innovation analysis employing the Value-Analyses of Relative Important (VARI) approach is utilised to gauge inclusivity and sustainability. VARI investigates what is more important to whom in a particular context. It does not investigate why people have the preferences they hold, which would require a follow-up study. Factors contributing to readiness are meticulously identified during XGain meetings, including consortium partners, and arranged into a value-tree framework (Figure 1). A questionnaire survey conducted with XGain consortium partners evaluated perceptions of relevance across use cases. The resulting value-tree encompasses technological, economic, environmental, social, and societal factors, serving as a comprehensive tool to guide discussions and monitor progress. This technical paper only presents the value-tree which is only a fragment of the complete study that will be published on the XGain webpage.

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## Results - Insights into Readiness Levels

Five main categories of factors were identified as explanatory to readiness level to adopt new broadband connectivity levels (Figure 1), including:

- Technological factors: Advancements in LoRa, Wi-Fi, 4G, and 5G technologies.
- Social factors: Improved health and safety, enhanced inclusion, and increased service support.
- Societal factors: Poverty alleviation, sustainability, and ethical animal treatment.
- Environmental factors: Reduced resource use, climate footprints, and enhanced biodiversity.
- Economic factors: Increased production, reduced costs, and increased profitability.

The VARI analysis reveals intriguing insights into the factors influencing readiness levels across different regions and contexts concerning these five factors:

- Technological factors, including advancements in LoRa, Wi-Fi, 4G, and 5G technologies, are crucial for digital sustainability. Our study found that technological factors are most prioritised in regions like Spain, Greece, Belgium, and Scilly Island, as technological infrastructure played a pivotal role.
- Social factors play a significant role in readiness, especially in cases in Greece, Belgium, and Lithuania, where improved health, enhanced inclusion, and increased service support were shown to be crucial for digital sustainability.
- Societal factors like poverty alleviation, sustainability, and ethical animal treatment are important in regions like Spain, Belgium, and Lithuania, where we saw that readiness levels strongly influenced societal values in these countries.
- Environmental factors, including reduced resource use, climate footprints, and enhanced biodiversity, are highest valued in regions like Croatia, Scilly Island, and Lithuania. These regions prioritise environmental sustainability as a critical aspect of digital readiness.
- Economic factors, including increased production, reduced costs, and profitability, are vital drivers of readiness across regions, but reported to be most important for the UK and Greece cases of XGain.

Subsequent analysis explores targeted investments in education, technological user-friendliness, governance for inclusion, and digital infrastructure, providing insights to bridge the digital divide effectively.

## Conclusion - Insights and Path Forward

The insights shed light on the factors driving readiness levels across diverse regions. Economic factors are predominant in Greece and Scilly Island, while technological factors are preferred in Spain, Greece, Belgium, and Scilly Island. Social factors are crucial in Greece, Belgium, and Lithuania, whereas societal factors are pivotal in Spain, Belgium, and Lithuania. Environmental factors hold the highest value in Croatia, Scilly Island, and Lithuania. Interestingly, regions with no case-specific relation prioritize social, societal, and environmental factors equally. These findings underscore the complexity of addressing the digital divide and emphasize the need for tailored strategies. By leveraging the Balanced Readiness Level framework, societies can bridge the digital gap and ensure equitable access to digital benefits. The insights highlight that the preferences and priorities differ greatly, which call for tailor-made approaches to enhance the connectivity. In turn, this might be a challenge for policymakers in the EU.

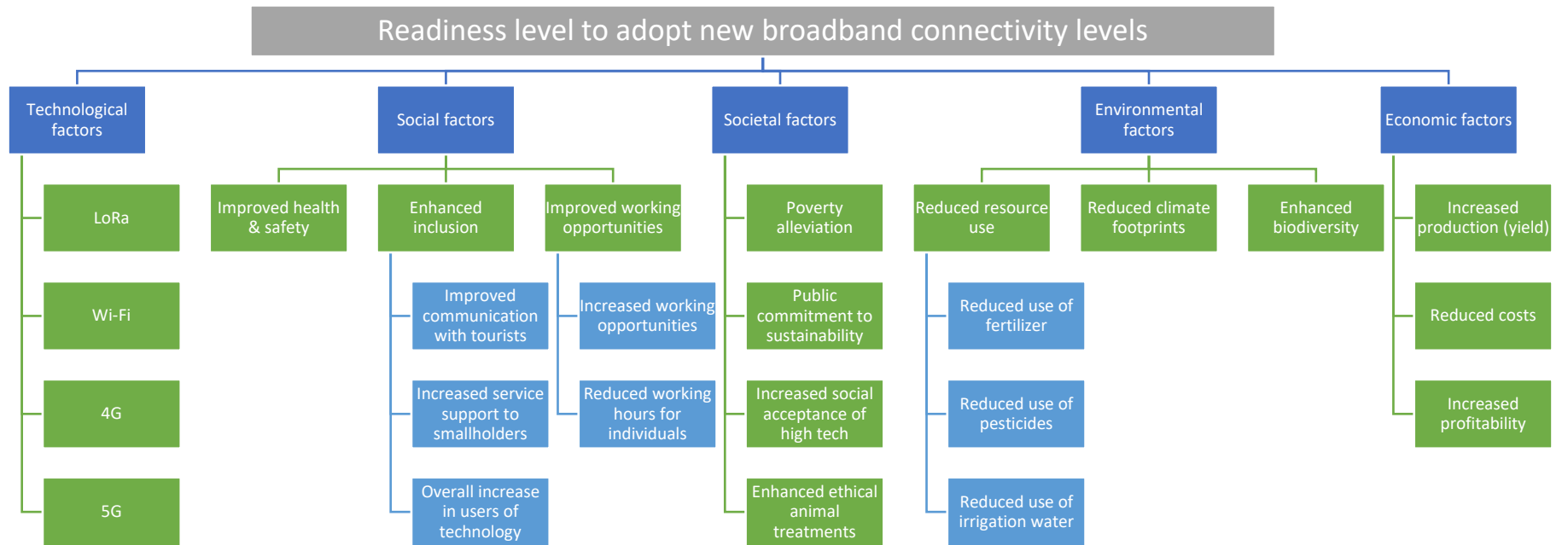


Figure 1: A value-tree for readiness level for adopting to new broadband connectivity levels in XGain

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