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## INNOVATION AND KNOWLEDGE TRANSFER AS A COMPETITIVE ADVANTAGE IN SMART RURAL DESTINATIONS

### ABSTRACT

Smart and Competitive Rural Areas was one of the broad themes of the European Network for Rural Development (ENRD) in the 2014–2020 programming period. As the current situation shows, we must explore smart rural development based on knowledge and innovation. The main purpose of the article is to analyse what is the role of innovation in rural destinations and how it gives a competitive advantage to the regions. The article, based on qualitative and quantitative research methods, highlights and studies the importance of knowledge transfer and innovations in the context of smart rural destinations. The main purpose of the article is to study smart rural destination experiences in Georgia and other foreign countries, especially in the EU. In conclusion, it can be said that smart rural development is one of the important trends of regional development and innovations play the most important role in it, but this represents a big challenge for developing countries and implementing innovations needs additional financial resources, skills and policies.

**Key words:** smart technologies, innovations, competitive advantage, rural development

**JEL Classification:** R0, M1, O3

### 1. INTRODUCTION

Smart destinations have become an esteemed concept among researchers and policy makers (Williams and Makkonen, 2020). Creating a coherent and smart rural destination requires a holistic view of technologies, services and innovations across sectoral, regional and administrative boundaries. The international trend in Smart Rural Destinations is that they grow in geographic spaces where agritourism and rural tourism development is planned. Smart rural destinations development is based on a technological infrastructure that enhances local sustainability while providing value to the destination itself through the experiences of people who visit it. At the same time, it improves the life of its inhabitants, with the help of knowledge sharing and implementing innovations in everyday life.

## 2. STATE OF KNOWLEDGE

### 2.1. INNOVATION AND KNOWLEDGE TRANSFER

One means of innovation is the adoption of new knowledge from external sources (Alexander and Childe, 2013). Knowledge may originate from various sources, including independent research centres outside the higher education sector. Hence, the UK Government Department of Business, Innovation and Skills (BIS, the ultimate successor to the Department of Trade and Industry) states on its website that “*Within a modern, knowledge-driven economy, knowledge transfer is about transferring good ideas, research results and skills between universities, other research organisations, business and the wider community to enable innovative new products and services to be developed*” (Howlett, 2010). A success factor that leads to innovation is knowledge sharing. Innovation can take place only in the presence of knowledge sharing (Kremer *et al.*, 2019). Castaneda and Cuellar in 2020 found 7,991 papers from 1973 to 2017 that relate innovation and knowledge sharing. The current state of the relationship between the topics is growing the most, which means that the number of articles published on the topic is still growing.

Fast-changing markets demand fast development of new products and processes. Thousands of tools and methods are available to help innovators discover what users want and how to deliver on their expectations. The challenge is to figure out which ones to use when. Luma Institute has created a framework to help us choose the best tool for each step of the innovation process, based on the people we design for and the complexity of the systems in which they operate. Luma distilled the portfolio down to 36 of the most effective tools for innovation – the majority of them in common use – organised into three categories: looking, understanding, and making. Each category contains three subcategories, and each subcategory contains four innovation tools. This hierarchical model makes it much easier to identify the tools that we need and then put them to use (A Taxonomy of Innovation, 2014).

### 2.2. COMPETITIVE ADVANTAGE

Knowledge transfer is vital to innovation and competitiveness (Weidenfeld *et al.*, 2010). Innovation is among the most important organisational capacities to obtain and maintain competitive advantage. It is highly dependent on the exchange of knowledge among workers. Knowledge contributes to a sustained competitive advantage through its application to the design of new products or services, or to their improvement (Ceylan, 2013). In 1986, Tushman & Nadler already stressed that “organisations can gain competitive advantage only by managing effectively

for today while simultaneously creating innovation for tomorrow” and suggested that “there is perhaps no more pressing managerial problem than the sustained management of innovation” (Urbancová, 2013).

### 2.3. SMART RURAL DESTINATIONS

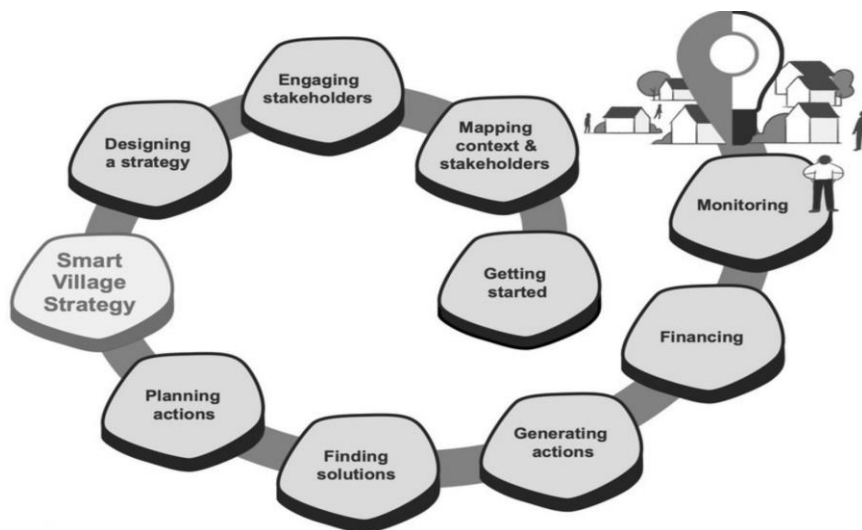
The ‘Preparatory Action on Smart Rural Areas in the 21<sup>st</sup> Century’ (Smart Rural 21) project was a two and a half-year project supported by the European Commission (DG AGRI), with the overall aim to promote and inspire villages to develop and implement smart village approaches and strategies across Europe, and to draw conclusions and support future policy interventions on smart villages. The project started in December 2019 and ended in November 2022 (Smart Rural 21 Project). The Smart Solutions Database gives access to a wide range of innovative practices adaptable to various local contexts.

Although there is no legal definition of ‘smart village’ in the EU legislation, there are a number of distinguishing features associated with the smart village concept, with the involvement of the local community and the use of digital tools being seen as core elements. The concept implies the participation of local people in improving their economic, social or environmental conditions, cooperation with other communities, social innovation and the development of smart village strategies. Digital technologies can be applied to many aspects of living and working in rural areas. The smart village concept also suggests the adoption of smart solutions in both public and private sectors over a wide range of policy fields such as improving access to services, developing short food supply chains and developing renewable energy sources.

Rural regions in the European Union (EU) are diverse in terms of their nature, geographic patterns, development levels and socio-economic and demographic trends. Covering 44.6% of the EU and home to 93.1 million people (20.8% of the total EU population), the EU’s rural regions are multifunctional spaces facing a range of challenges. These include: demographic aging leading to the decline in the number of people of working age, a weak labour market and even depopulation of certain rural and remote areas. Other challenges facing rural areas when compared to urban areas include lack of infrastructure and service provision, poorly diversified economy, low incomes coupled with a higher poverty and social exclusion risk, farmland abandonment, lack of education facilities, high number of early school leavers and a digital gap and divide (*i.e.* lack of reliable internet connections limiting both individuals and businesses).

In a global context, the beginnings of the smart village concept date back to the middle of the last decade, based on initiatives pursued in Africa, Central and South America and Asia. In the EU, the emergence of the smart village concept is closely associated with the 2016 Cork 2.0 Declaration for a Better Life in Rural Areas, which set out a 10-point manifesto to improve quality of life in rural areas.

It highlighted the need to narrow the digital divide between rural and urban areas and to develop the potential offered by connectivity and digitalisation in rural areas. The concept was given further impetus in 2017 by the European Commission's publication EU Action for Smart Villages. This set out several EU policy areas and funds actively promoting the concept, including planned measures, adopting a holistic and integrative approach towards those objectives. It defined smart villages as "those (local communities) that use digital technologies and innovations in their daily life, thus improving its quality, improving the standard of public services and ensuring better use of resources" (Smart Villages). In Figure 1, a model of smart rural destinations is presented.



Source: The Smart Rural 21 Project, n.d.  
Figure 1. Smart Rural Destinations.

A certain analogy exists between the smart-village concept and the sustainable-development concept. In both concepts, attention is drawn to maintaining a balance between the economy, society and natural environment. This should improve the quality of life of residents, while taking account of the current economic benefits of different groups as well as the environment they live in (Komorowski and Stanny, 2020).

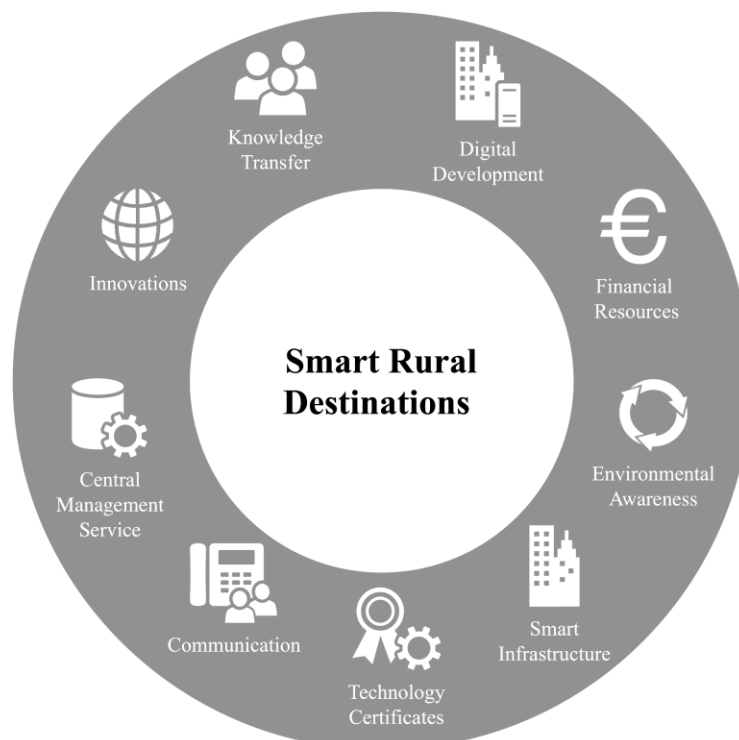
### 3. MATERIAL AND METHOD

The research was conducted using materials provided by research papers, strategies, literature reviews (analysing materials regarding innovation and knowledge transfer as a competitive advantage in smart rural destinations), as well

as books and internet resources of Georgian and foreign scientists (international and state organisations). The content analysis method was used to study current innovation and knowledge transfer activities, which brings competitive advantage in smart rural areas. The article also discusses the examples of different countries, where smart technologies are actively integrated and have gained competitive advantage. The research was carried out according to the hypothesis of innovation and knowledge transfer as a competitive advantage in smart rural areas. The research is based on both qualitative and quantitative research methods, and was carried out from November 1, 2023 to January 15, 2024.

#### 4. RESULTS AND DISCUSSIONS

According to the discussed literature, there are a lot of factors surrounding smart rural destinations (Figure 2). For achieving the desired development, access is necessary to financial resources, which gives possibilities especially for knowledge transfer.



*Source:* Authors' according to the research.

Figure 2. Smart Rural Destinations and their influencing factors.

Table 1

## Smart Solutions in Smart Rural Business

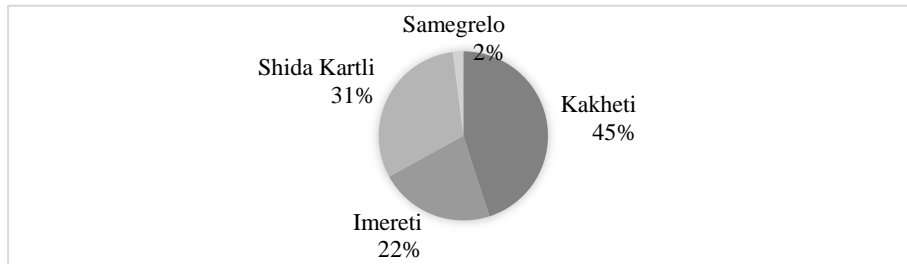
Factor	Solutions	Notes
People	<ul style="list-style-type: none"> <li>● Education (schools, children, youth)</li> <li>● Engaging youth</li> <li>● Improving eSkills</li> <li>● Improving other skills</li> <li>● Social inclusion of disadvantaged groups</li> <li>● Supporting elderly people</li> <li>● Volunteering</li> <li>● Work-life balance</li> </ul>	All listed skills are important especially for developing countries. If we analyse these factors separately, all of them are deeply related to sustainable development and its goals.
Economy	<ul style="list-style-type: none"> <li>● Entrepreneurship/ business support</li> <li>● Farming and agri-food business</li> <li>● Inward investment &amp; FDI</li> <li>● Research, innovation &amp; knowledge development</li> <li>● Social enterprise</li> <li>● Supporting job seekers</li> <li>● Tourism/ recreation</li> </ul>	Economic factors are the most important factors for the regions, especially local business development. Innovations are critically important in this case.
Living	<ul style="list-style-type: none"> <li>● (e)health/ healthcare services</li> <li>● Arts &amp; music</li> <li>● Community space</li> <li>● Culture &amp; heritage</li> <li>● Housing</li> <li>● Liveable &amp; Tidy Towns</li> <li>● Other public services</li> <li>● Safety &amp; crime</li> <li>● Sports, hobbies &amp; interests</li> <li>● Support to newcomers</li> </ul>	The given list also responds to sustainable development goals. For gaining competitive advantage it is important to take care of people's well-being.
Environment	<ul style="list-style-type: none"> <li>● Bioeconomy</li> <li>● Circular economy / waste management</li> <li>● Habitats and biodiversity</li> <li>● Land management</li> <li>● Low carbon economy</li> <li>● Renewable energy &amp; energy efficiency</li> <li>● Resource efficiency</li> <li>● Soil</li> <li>● Water</li> </ul>	Environmental issues are important and in this case knowledge transfer and innovations are especially important.
Connectivity & mobility	<ul style="list-style-type: none"> <li>● Broadband connection &amp; infrastructure</li> <li>● Cycling / walking routes</li> <li>● Improving transport connectivity</li> <li>● Use of digitalisation &amp; new technologies</li> </ul>	Affordability is also one of the important issues for rural areas, for the government it is challenging to educate people and implement digital technologies in infrastructure.

Table 1 (continued)

Governance	<ul style="list-style-type: none"> <li>● Communication</li> <li>● Community capacity-building</li> <li>● Cooperation (with other villages inclusively)</li> <li>● Improving urban-rural linkages</li> <li>● Public engagement in decision-making</li> <li>● Public-private partnership</li> </ul>	<p>The role of government for all given factors is the main driver and their role is huge, connecting people, supporting PPP, supporting educational programs, finding finance sources etc. are the factors that play an irreplaceable role.</p>
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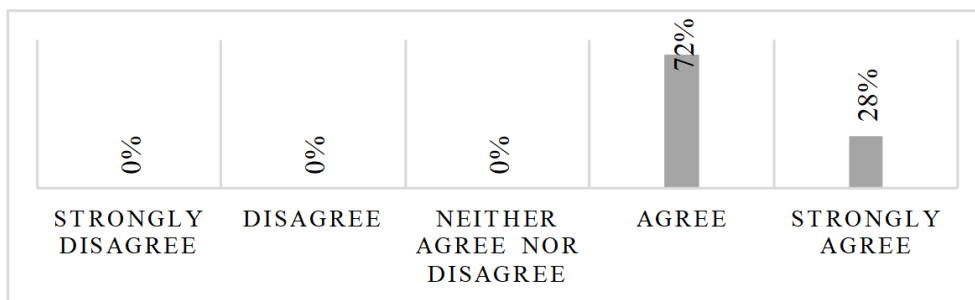
Source: Authors' according to The Smart Rural 21 Project database.

For Georgian rural business owners, implementing innovations is a new trend. One hundred rural business owners were interviewed, with the help of social platforms whose members they are. They were interviewed from November 15 to December 15, 2023. For the interviewed entrepreneurs by regions, see Figure 3.



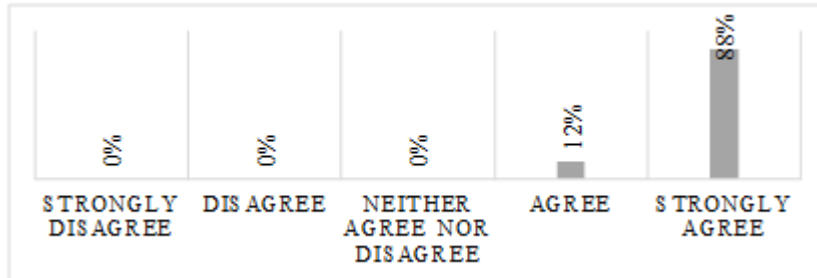
Source: Authors' according to the research.  
Figure 3. Entrepreneurs by region.

On the statement “Knowledge transfer plays an important role in implementing innovations”, the respondents could provide the following answers, according to the Likert scale (1) Strongly Disagree; (2) Disagree; (3) Neither Agree nor Disagree; (4) Agree; (5) Strongly Agree.



Source: Authors' according to the research.  
Figure 4. Knowledge transfer and innovations.

The last provided statement was our hypothesis “*Innovation and knowledge transfer as a competitive advantage in smart rural areas*”, for which respondents could provide the following answers, according to the Likert scale (1) Strongly Disagree; (2) Disagree; (3) Neither Agree nor Disagree; (4) Agree; (5) Strongly Agree.



Source: Authors' according to the research.

Figure 5. Innovation and knowledge transfer as a competitive advantage in smart rural areas.

Although in Georgia it is clearly seen that smart technologies are important for business providers in rural areas, they are still not implemented. For Georgia, it is important to develop smart rural areas where rural and agritourism are being actively developed, and one of the most important regions is Kakheti for this purpose.

Table 2

The best smart rural destinations

Country	Characteristics
Spain	La Noguera Medinaceli aims at improving the effectiveness of policies by actively supporting social entrepreneurs in sparsely populated areas as a driver to regional competitiveness, job creation and inclusive growth. La Noguera Medinaceli considers that Social Enterprises directly benefit local development and local communities.
Finland	Eskola is a small and active village in western Finland. We are a pioneer of village development: our own company Eskola Village Service Ltd. provides daycare, restaurant and domestic services, and the village society operates EU projects. Eskola is also experimenting a new way to organise primary schooling with a partner town 500 km away, using digital teaching applications. Website : <a href="http://eskolankyla.fi/en/">http://eskolankyla.fi/en/</a>
Hungary	Nagypáli is a village of 540 inhabitants in Zala county in Western Hungary. The village has been developed over the past 15 years building on its natural resources based on its Green Road Village Development Programme. Developments have focused on renewable energy, tourism and local products through close cooperation of the local government and civil society. Website : <a href="http://www.nagypali.hu">www.nagypali.hu</a>
Romania	The village Chiscani is located in Braila county and has a population of 5340 inhabitants. It consists of the villages Chiscani (residence village), Lacu Sarat and Varsatura. The village is on the Danube. Key development areas include the Salt Lake Spa Resort and Natural Park Balta Mica of Braila, agricultural industry, favourable weather conditions and high solar potential. Website : <a href="http://primariachiscani.ro/">http://primariachiscani.ro/</a>



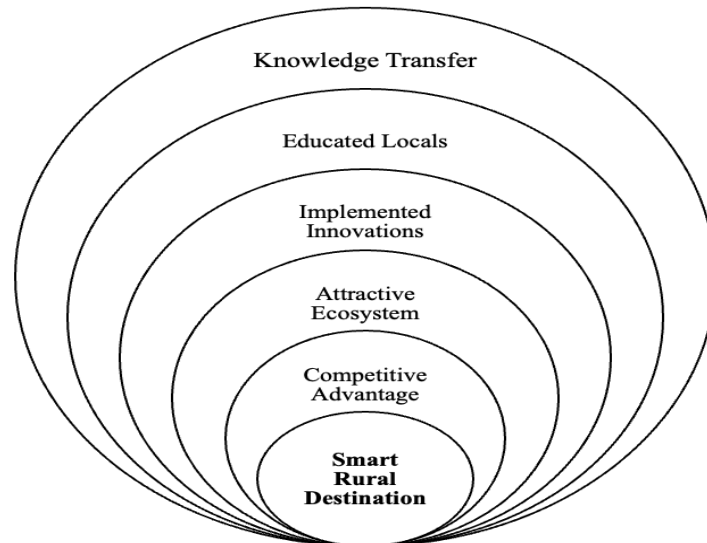
Table 2 (continued)

Czech Republic	Mukařov is a village with 2500 inhabitants located 30 km from Prague, the capital of the Czech Republic. It consists of three parts (former independent communities) – Mukařov, Srbín and Žernovka. Mukařov is within a satellite ring of the capital city, with a massive increase in population and newly built houses. The local inhabitants are losing their farming and stonemason traditions, while the fields are changing to new streets of family houses where people are strangers to their neighbours. Most people are commuting to their work and fighting everyday traffic jams. We aim to improve the quality of life of our inhabitants, boost sustainable development, preserve the environment and good relations among neighbours – both long term residents and newcomers. Website : <a href="https://www.mukarov.cz/">https://www.mukarov.cz/</a>
Scotland	Strathyre is the first Smart Village in Scotland. As a small rural community, it had become inactive, but through a series of steps driven by aspiration, the community improved the village and its surroundings with a bottom-up strategy. Tourists arrived and the local economy benefited significantly. A digital portal now provides a wide range of useful information.
Germany	Schickelsheim plans to retrieve the attractiveness of their traditional farm village using modern and smart approaches. Giving a new perspective to this beautiful patch of land and its people motivates them. “Sustainability does not happen. Striving for the new while fostering strong roots: Farming and developing a healthy environment will keep playing a key role in our life”.
France	Lormes has an ambition to be a village of the future; connected to global digital opportunities but also galvanising the community to co-create priority local services. With fibre-optic internet in every street and a multi-functional digital hub/fab-lab and related services, new opportunities are created for business, local government and the rural community.
Ireland	The Ludgate Hub in Skibbereen, Co. Cork, Ireland’s first 1GB town, is one of the best examples of innovation occurring in rural Ireland and indeed a blueprint for other rural areas. Our goals are ambitious, ultimately resulting in a return of the diaspora, creating an ecosystem of creativity and innovation, and progressing the facilitation of job growth via digital technology.
Portugal	Vila Boa do Bispo is located in the North of Portugal. Our village has a very dynamic community where youth and sports organisations thrive and social institutions provide diverse and comprehensive support to the population. This small village has rich natural resources, from the Cabreira mountains to the international Tamega river.
Slovenia	Ptuj – They will strive to raise the quality of life in our municipality by excelling in multiple areas of smart environment. By using information and communication technologies they aim to increase operational efficiency and improve the quality of government services such as energy, mobility and inhabitants’ welfare.

Source: Authors’ according to the collected data from smart village network.

As it is demonstrated in Table 2, in smart rural destinations, an important role is played by tourism and agriculture development, so that in order to achieve and gain competitiveness of rural destinations it is necessary to have a developed agriculture and infrastructure.

According to the conducted research, a framework was created which demonstrates how knowledge transfer and innovations bring competitiveness to smart rural destinations, see Figure 6.



Source: Authors' according to the research.  
Figure 6. The Framework of Smart Rural Destinations Development.

## 5. CONCLUSIONS

As the conducted research shows, knowledge transfer and innovation are actively discussed together as one determines another and altogether implemented in regions give competitive advantage, as smart rural destinations are a trend nowadays, and they really give opportunity to regions to achieve long term sustainability. The Smart Rural Destinations phenomenon represents the logical and natural development of traditional rural areas. It is the consequence of the improvement of communication technologies applied to the services they provide on daily operating processes. In the scenario of contemporary strategic communication, the experience of the new patterns shows special and distinctive opportunities for rural areas and their actual stakeholders, citizens. Innovations, technologies and mainly the development of the Internet have helped citizens access an infinite and varied amount of digital content, developed not only through private initiatives, but also through public ones, with the help of knowledge transfer.

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