PROCEEDINGS THE 4th INTERNATIONAL CONFERENCE ON ECONOMICS, BUSINESS, AND MANAGEMENT RESEARCH (ICEBMR) "Cultural Tourism as a Tool for National Building or Neocolonialism in the Bandung Spirit"
https://e-conf.usd.ac.id/index.php/icebmr/ | ISSN: 3032-596X | Vol 4, 2025

NATIONAL INTELLECTUAL CAPITAL AND RURAL DIGITAL TRANSFORMATION

Rima Rachmawati[1], Fitri Sukmawati[2], Eka Angga Laksana [3]
[1,2,3]Universitas Widyatama, Bandung
[1]rima.rachmawati@widyatama.ac.id, [2]fitri.sukmawati@widyatama.ac.id, [3]eka.angga@widyatama.ac.id

ABSTRACT

This study examines the role of intellectual capital (IC)—comprising human, structural, and relational capital—in driving rural digital transformation in Indonesia. Using a Balanced Scorecard (BSC) framework, we conduct an in-depth case study of Ciburial Village to assess how intangible assets enable innovation, improve digital service delivery, and foster sustainable local economic growth. Data were collected through in-depth interviews, observations, and document analysis, then mapped to four BSC perspectives: learning and growth, internal processes, customer/stakeholder, and financial/economic. Findings reveal that human capital—particularly digital literacy and innovation capability—acts as the primary driver of transformation, supported by structural capital (digital infrastructure and systems) and relational capital (collaborations with government, academia, and private sectors). By linking village-level IC to National Intellectual Capital (NIC), this study offers both theoretical and practical contributions. It extends NIC theory by demonstrating how micro-level IC initiatives support national digital competitiveness and proposes a policy dashboard integrating IC and BSC for guiding smart village development. The findings are particularly relevant to policymakers, academics, and practitioners interested in intellectual capital, rural innovation, and sustainable economic development.

***Keywords**: Intellectual Capital, Balanced Scorecard, Rural Digital Transformation, National Digital Development, Sustainable Development Goals.*

1. Introduction

Digital transformation has become a crucial pillar of national development in many countries, including Indonesia. The village digitalization agenda, promoted through the **Digital Village** program and aligned with the **Sustainable Development Goals (SDGs)**, is designed to strengthen economic competitiveness, enhance the quality of public services, and foster a community-based innovation ecosystem (Bontis 2004; Lin and Edvinsson 2011). Within this context, **intellectual capital** emerges as a strategic asset, as it integrates **knowledge, skills, innovation, and social networks** to support the success of technology-driven development initiatives.

Ciburial Village, located in Cimenyan District, Bandung City, serves as a noteworthy example of a tourist village that has begun leveraging digital technologies to enhance tourism promotion, facilitate administrative services, and empower Micro, Small, and Medium Enterprises (MSMEs). This transformation highlights the crucial role of **intellectual capital** at the village level as a driving force for innovation and sustainable development (Švarc, Lažnjak, and Dabić 2021).

However, the implementation of digital transformation in rural areas requires more than just the presence of technology; it also demands adequate **human resource capacity, organizational structures**, and **strong external collaborations**. This is where **intellectual capital** plays a pivotal role. Through the lens of the **Balanced Scorecard (BSC)** framework, intellectual capital can be examined across four strategic dimensions: **learning and growth, internal processes, customer perspective, and financial perspective**. Integrating the BSC framework with the context of digital transformation enables this study to explore how rural communities manage knowledge, innovation, and social networks to achieve national competitiveness.

Globally, research on intellectual (Vo and Tran 2021, 2022, 2024) capital has predominantly focused on the corporate, large-scale organizational, or urban levels. Meanwhile, studies that link **intellectual**

capital at the village level with **digital transformation** and **national economic development** remain scarce, particularly in developing countries such as Indonesia.

Moreover, most previous studies have measured intellectual capital using the **Value Added Intellectual Coefficient (VAIC)** approach (Khalil, Malik, and Ahsan 2024), which is primarily oriented toward financial outputs. This approach is insufficient in integrating non-financial dimensions, such as **digital innovation, collaboration, and knowledge management** (Martinez-Gil et al. 2022). Therefore, adopting the **Balanced Scorecard** framework combined with the context of village digitalization offers a more comprehensive and relevant perspective (Mahaputra et al. 2021). This study aims to:

a. Explore the role of **intellectual capital** in driving the **digital transformation** of Ciburial Village.
b. Analyze the contribution of village-level intellectual capital to the national **digital-based economic development agenda**.
c. Develop a **Balanced Scorecard**-based analytical framework to evaluate the performance of intellectual capital at the village level.

2. Literature Review

2.1. Intellectual Capital: Concepts and Dimensions

Intellectual capital refers to knowledge-based assets possessed by an entity that can be utilized to generate both economic and social value (Edvinsson and Malone 1999). In general, intellectual capital is categorized into three main dimensions:

1. Human Capital: The knowledge, skills, creativity, and experience of individuals within an organization or community.
2. Structural Capital: The organizational infrastructure, technologies, processes, and systems that facilitate the creation and dissemination of knowledge.
3. Relational Capital: The network of relationships with external stakeholders, including customers, partners, communities, and government institutions.

In the context of rural communities, these three dimensions operate synergistically. For instance, citizens' digital literacy (human capital) requires adequate technological infrastructure (structural capital) as well as collaboration with universities or government institutions (relational capital).

2.2. Balanced Scorecard as a Framework for Evaluating Intellectual Capital

The Balanced Scorecard (BSC) framework introduced by Kaplan (2004) provides a comprehensive approach to evaluating organizational performance through four strategic perspectives:

e. Learning and Growth Perspective – Measures the capacity of human resources, skill development, and the cultivation of an innovation-driven culture.
f. Internal Process Perspective – Assesses the effectiveness of internal processes, including knowledge management and technological integration.
g. Customer Perspective – Reflects stakeholder satisfaction, particularly among tourists, micro, small, and medium enterprises (MSMEs), and local communities.
h. Financial Perspective – Evaluates the economic impact of leveraging intellectual capital, such as increased MSME revenues or village income generation.

By integrating intellectual capital into the BSC framework (Zhu et al. 2020), this study provides a more holistic analysis that encompasses both financial and non-financial dimensions (Lerro, Linzalone, and Schiuma 2014).

2.3. National Intellectual Capital and Digital Economic Development

National Intellectual Capital (NIC) refers to the total knowledge assets of a nation that are leveraged to foster innovation, enhance competitiveness, and drive economic growth. According to Bontis (2001), countries with strong intellectual capital tend to be more adaptive to global technological changes.

In the context of Indonesia, digital economic development has become one of the national priorities through various strategic programs (Mahaputra et al. 2021), including:

e. Digital Villages (Desa Digital) aimed at improving public services and enhancing digital literacy.
f. Village SDGs (SDGs Desa) designed to promote digital inclusion and alleviate poverty.
g. MSME Empowerment through e-commerce platforms and integrated information systems.

This study examines the contribution of Ciburial Village's intellectual capital to achieving national development agendas within the framework of NIC.

2.4 Rural Digital Transformation

Rural digital transformation is not solely about the provision of technology but also about leveraging knowledge and innovation to improve community welfare (Cāne 2021). Recent studies (de Matos Pedro, Leitão, and Alves 2020; Mazya et al. 2023; N. R. Irmayani et al. 2022) indicate that villages with strong intellectual capital capacity are better prepared to adapt to digital change, harness tourism potential, and build local competitiveness.

Ciburial Village represents a unique case due to its success in utilizing tourism potential and digital technologies to enhance promotion, expand marketing networks, and integrate local micro, small, and medium enterprises (MSMEs) into the digital economic ecosystem.

State of the Art. From the literature review, no prior studies have:

2 Examined the role of village intellectual capital in supporting national digital transformation.
3 Integrated the Balanced Scorecard framework within the context of digital village development.
4 Provided empirical evidence through case studies in Indonesian tourism villages.

Therefore, this study addresses these gaps and makes a significant contribution to the advancement of intellectual capital theory within the framework of national development.

This study examines how the intellectual capital of Ciburial Village—including human, structural, and relational capital—contributes to rural digital transformation through the lens of the Balanced Scorecard framework. The findings are further linked to the achievement of national digital-based economic development goals.

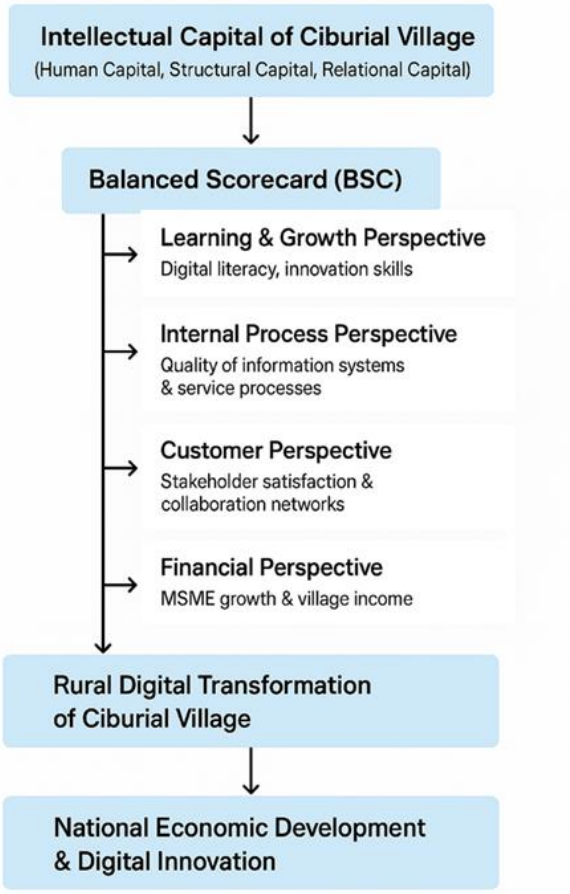

Figure 1. Professional Visual Diagram For The Conceptual Framework

3. Research Methods

3.1. Research Design

This study employs a qualitative case study approach to explore in depth the role of intellectual capital in supporting the digital transformation of Ciburial Village. This approach was chosen because it enables the researcher to understand local dynamics, knowledge management strategies, and stakeholder interactions within their contextual setting (Creswell and Poth 2017).

The Balanced Scorecard (BSC) framework is employed as an analytical lens to examine the contribution of village intellectual capital through four key perspectives:

a. Learning and Growth Perspective – focuses on the capacity of human capital, digital literacy, and the cultivation of an innovation-oriented culture.
b. Internal Process Perspective – emphasizes the quality of the village's internal processes, integration of information systems, and knowledge management practices.
c. Customer Perspective – assesses the satisfaction of tourists, micro, small, and medium enterprises (MSMEs), and other external stakeholders regarding village digitalization initiatives.
d. Financial Perspective – evaluates the economic impact of intellectual capital management on village income and the financial performance of MSMEs.

3.2. Research Setting

Research Location. Ciburial Village, Cimenyan District, Bandung City. Recognized as a tourism village with significant potential in culture, natural attractions, and the creative economy. The village is currently implementing programs for digitizing public services, digital media-based tourism promotion, and empowering micro, small, and medium enterprises (MSMEs) through e-commerce.

Rationale for Selecting the Location. Ciburial Village serves as a representative model of a tourism village in Indonesia that actively integrates digital transformation with local economic empowerment. The village demonstrates concrete initiatives in utilizing intellectual capital at the micro level, while its implications are highly relevant to national economic development agendas.

3.3. Research Participants

The study involved four main groups of stakeholders:

a. Village Government Officials. Consisting of one village head, three heads of administrative affairs (finance, governance, and planning), four hamlet heads, and one village secretary.
b. MSME Actors. Including one culinary business owner from Skyline and one tourism service provider.
c. Local Community Members. Represented by two residents actively participating in digitalization and creative economy initiatives.
d. External Partners. Comprising one representative from the Islamic University of Bandung supporting digital transformation and one representative from Widyatama University.

In total, there were 15 informants selected using a purposive sampling technique, based on their active involvement in the village digitalization program.

3.4. Data Collection Techniques

This study employed three primary data collection methods to obtain comprehensive and reliable information:

a. In-depth Interviews The purpose of the in-depth interviews was to explore stakeholders' understanding, experiences, and strategies in managing intellectual capital within the local context. These interviews provided rich qualitative insights from multiple perspectives.
b. Participatory Observation Direct observations were conducted to examine real-time activities related to the use of digital technologies in Ciburial Village. This approach allowed the researcher to capture natural behaviors and contextual practices that support or hinder technology adoption.
c. Document Analysis Document analysis focused on reviewing village policy documents, development reports, statistical data, and digital media content. This method aimed to

triangulate findings from interviews and observations, ensuring data validity and a more holistic understanding of the studied phenomena.

3.5. Data Analysis

The ATLAS.ti software is a qualitative analysis tool designed to enhance the accuracy, consistency, and transparency of data analysis. The following steps were undertaken:

a. Data Familiarization: Carefully reading interview transcripts and observation notes to gain a comprehensive understanding of the context, participants, processes, and key findings.
b. Coding and Categorization: Identifying and classifying major themes related to intellectual capital and digitalization.
c. Mapping to the Balanced Scorecard: Aligning the findings with the four perspectives of the Balanced Scorecard (BSC).
d. Cross-case Analysis: Comparing data across different stakeholders to identify recurring patterns and relationships.
e. Data Triangulation: Validating the analysis results by integrating evidence from interviews, observations, and document reviews.

4. Research Findings and Discussion

4.1. Profil Transformasi Digital Desa Ciburial

The observations indicate that Ciburial Village has utilized digital channels for basic administrative services, destination promotion, and MSME facilitation. These initiatives align with the "digital village" and "smart village" policy directions, which position technology as a driver of public service delivery, economic inclusion, and quality of life in Indonesia's rural areas. Relevant macro-level policy findings include the promotion of rural digital transformation within the T20-Indonesia agenda and the sharing of "smart village" best practices to address disparities in service provision, connectivity, and human resource capacity.

4.2. Key Findings from the Balanced Scorecard Perspective

Mapping the findings into the four perspectives of the Balanced Scorecard, which are linked to the three main dimensions of intellectual capital. The following is the analytical matrix to be used:

Table 1. Mapping The Findings Into The Four Perspectives of The Balanced Scorecard

Balanced Scorecard Perspective	Dimensi Modal Intelektual	Indikator Utama	Sumber Data
Learning & Growth	Human Capital	Digital Literacy, Innovation Skills, and Citizen Participation	Interviews, observations
Internal Processes	Structural Capital	Information System Quality, Service Process Integration, and Knowledge Management	Interviews, observations
Customer	Relational Capital	Tourist Satisfaction, Stakeholder Support, External Collaboration	Interviews, survey
Finansial	Human + Structural + Relational	Village income enhancement, MSME growth, and tourism revenue	

Our qualitative findings map the three dimensions of intellectual capital onto the four perspectives of the Balanced Scorecard (BSC) as follows:

a. Human Capital. Learning & Growth, Internal Process The digital competencies of civil servants and citizens drive continuous learning and process discipline. Research on the integration of BSC and IC highlights knowledge development as the core driver of strategic initiatives.
b. Structural Capital. Internal Process, Financial ICT infrastructure, standardized operating procedures (SOPs), and information systems enable operational efficiency and scalability, which in turn generate positive economic impacts.
c. Relational Capital. Customer/Stakeholder, Financial Partnership networks and social trust accelerate digital adoption and expand market opportunities. At the macro level, the Journal of

Intellectual Capital literature indicates that social capital and workforce skills are strong predictors of national digital transformation readiness.

4.2.1. Learning & Growth Perspective

Theme 1: Digital literacy and citizens' capacity are improving, but progress remains uneven. Residents and micro, small, and medium enterprises (MSMEs) have begun utilizing social media, village applications, and online marketplaces for promotion and transactions. However, disparities emerge across age groups and access to training opportunities. Consistent with the systematic review of the modern Balanced Scorecard (BSC), knowledge-oriented learning and growth indicators serve as the "foundation" for other perspectives.

Theme 2: Community innovation culture is strengthened through collaboration. External partner assistance, such as from universities and local governments, accelerates the diffusion of digital practices for MSMEs, in line with the findings of empowerment research on the 'Digital Village' initiative in West Java.

4.2.2. Internal Process Perspective

Theme 3: Digitalization of Public Services Requires Stronger Integration of Processes and Data

The digitalization of public services is underway, with websites and digital service applications being increasingly adopted. However, significant challenges remain regarding data interoperability, standardized knowledge management procedures, and the quality of connectivity. Literature on smart villages highlights the importance of establishing an end-to-end process architecture to ensure that Information and Communication Technology (ICT) truly enhances the efficiency and accountability of public services.

4.2.3. Customer/Stakeholder Perspective

Theme 4: Enhanced Tourist Experiences and Cross-Actor Partnerships Digital information facilitates tourist activities and increases the visibility of micro, small, and medium enterprises (MSMEs). Strategic collaborations with universities, communities, and local governments expand marketing networks and strengthen destination branding. Recent policy analyses and empirical reviews highlight the pivotal role of local community participation as a key determinant in the successful implementation of smart village initiatives.

4.2.4. Financial/Economic Perspective

Theme 5: Early Signals of Increasing Local Economic Activity Digitalization drives the diversification of marketing channels and revenue opportunities for tourism villages. The literature indicates that when learning perspectives, processes, and customer orientation are aligned, financial impacts follow as a logical consequence.

4.3. Micro–Macro Linkages: From Village Dynamics to the National

The case study in Ciburial Village demonstrates how strengthening Intellectual Capital (IC) at the village level resonates with the broader framework of National Intellectual Capital (NIC). This alignment reinforces the argument that investing in village-level IC contributes significantly to achieving national digitalization targets. Furthermore, it serves as an operational blueprint for advancing the national digital economy, fostering a synergy that can be effectively replicated by other villages.

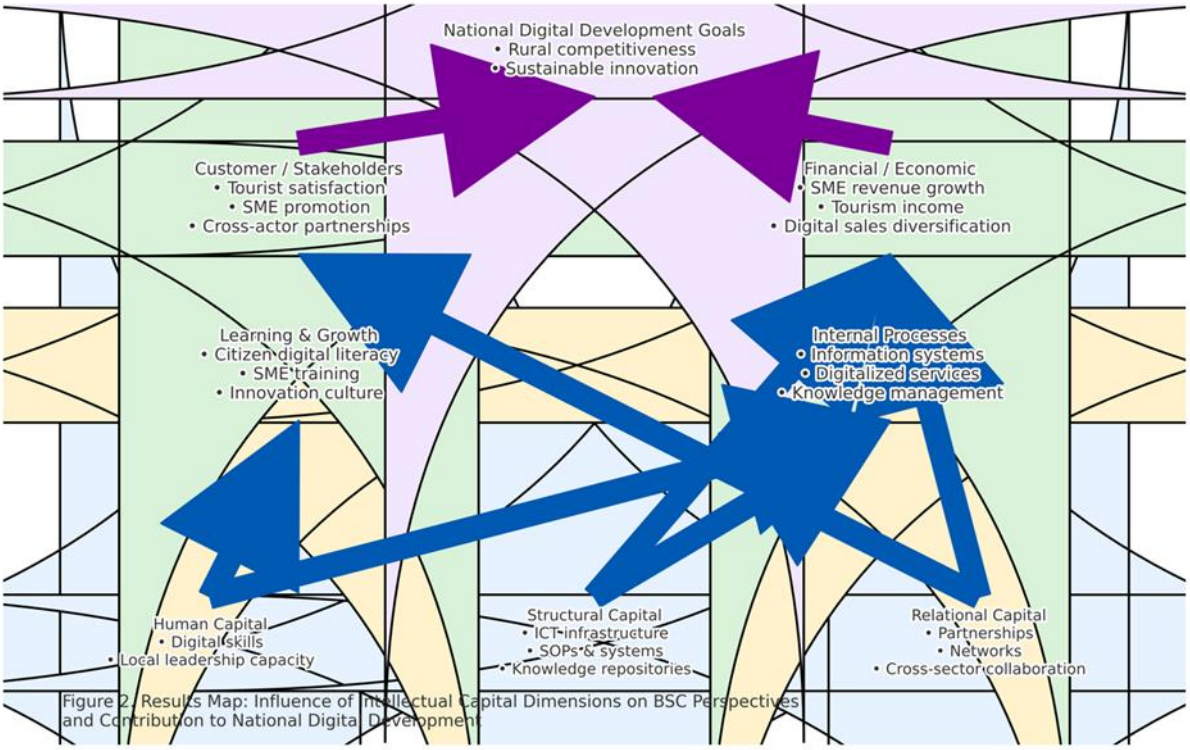

Figure 2. Result Map: Intellectual Capital Dimensions on BSC Perspective and Contribution to National Digital Development

Figure 2, positions Intellectual Capital (IC) as the foundational pillar comprising three dimensions: human capital, structural capital, and relational capital. Human capital encompasses digital competence, technological literacy, and local leadership capacity, while structural capital includes ICT infrastructure, village information systems, standard operating procedures (SOPs), and knowledge repositories. Relational capital is reflected through strategic partnerships with universities, government bodies, the private sector, and community networks, collectively forming a strategic foundation for driving village digitalization.

The middle layer illustrates the Balanced Scorecard (BSC) framework with four perspectives that map the role of IC in enhancing village performance: learning and growth, internal processes, customer/stakeholder, and financial/economic. These perspectives highlight improvements in citizens' digital literacy, efficiency in digital service processes, satisfaction among tourists and local SMEs, and growth in digitally driven income streams. The integration of IC and BSC ultimately fosters rural digital transformation, enhances the competitiveness of tourism villages, strengthens the digital creative economy, and contributes significantly to the national economic development agenda and the achievement of the Village SDGs.

Table 2 maps the dimensions of intellectual capital and the four perspectives of the Balanced Scorecard (BSC) with concrete, data-driven policy indicators derived from field findings in Ciburial Village. This dashboard is particularly compelling as it offers an applied framework that is ready to be adopted by national policymakers.

Table 2. Integrating Intellectual Capital, Balanced Scorecard, and the National Innovation Committee (NIC) Agenda

Perspektif Balanced Scorecard	**Intellectual Capital Dimensions**	**Key Performance Indicators (KPIs)**	**Village Development Targets**	**Contribution to National Intellectual Capital (NIC)**
Learning & Growth	Human Capital	1) Percentage of digitally literate residents 2) Number of digital training sessions per year 3) Number of MSMEs certified in digital literacy	90% of residents proficient in using digital services; four training sessions per year.	Enhances local working skills and strengthens knowledge assets.
Internal Processes	Structural Capital	1) Adoption rate of the Village Information System (SID) 2) Number of standardized operating procedures (SOPs) for digitalized public services 3) Index of data integration among village units	100% of public services digitalized.	Strengthens process capital and fosters institutional innovation.
Customer/Stakeholder	Relational Capital	1) Digital-based tourist satisfaction score (NPS) 2) Number of active partner networks 3) Number of MSMEs utilizing online promotional channels	Skor NPS > 85 10+ active partnerships.	Accelerates market capital growth and improves global competitiveness.

Financial/Economic	Human + Structural + Relational Capital	1) Growth in MSME revenue through digital channels 2) Percentage of digital-based tourism retribution 3) Volume of transactions via the village marketplace	30% annual MSME revenue growth; digital-based retribution exceeding 50%.	Strengthens economic renewal capital and contributes directly to GDP through a digital economy framework.

5. Conclusion

This study highlights the role of intellectual capital (human, structural, and relational capital) in driving rural digital transformation through a case study of Ciburial Village, analyzing the findings within the framework of the Balanced Scorecard (BSC). The results indicate that intellectual capital at the village level not only influences the success of local digitalization but also contributes to achieving National Intellectual Capital (NIC) and advancing the national digital economy agenda.

The study reveals that digital literacy and community competencies (human capital) serve as the foundation for successful digitalization of public services and MSME development, while village information systems, ICT infrastructure, and standardized digital procedures (structural capital) enhance governance efficiency. Collaboration with local governments, universities, tourism communities, and the private sector (relational capital) further boosts MSME competitiveness and promotes rural tourism. Integrating the Balanced Scorecard (BSC) perspectives provides a holistic view, demonstrating a clear causal link between competency development and sustainable economic outcomes. Overall, Ciburial Village can serve as a micro-model for applying NIC within the context of digital villages in Indonesia and represents a replicable best practice for other tourism-oriented rural areas.

Acknowledgements

The authors would like to express their sincere gratitude to the Ministry of Education, Culture, Research, and Technology for providing financial support through the Fundamental Research Grant Scheme under the Main Contract Number 125/C3/DT.05.00/PL/2025, Sub-Contract Number 8037/LL4/PG/2025, and 007/SP2H/PFR/LP2M-UTAMA/VI/2025. Special thanks are also extended to the Research and Community Service Institute of Widyatama University for its invaluable support in facilitating the implementation of this study. The authors are equally grateful to all informants, including village officials, community leaders, and other stakeholders, for their time, insights, and valuable contributions that significantly enhanced the success of this research.

References

Bontis, N. 2004. ‘National Intellectual Capital Index: A United Nations Initiative for the Arab Region’. *Journal of Intellectual Capital* 5(1):13–39. doi:10.1108/14691930410512905.

Bontis, Nick. 2001. ‘Assessing Knowledge Assets: A Review of the Models Used to Measure Intellectual Capital’. *International Journal of Management Reviews* 3(1):41–60. doi:10.1111/1468-2370.00053.

Cāne, R. 2021. ‘Development of Smart Villages as a Factor for Rural Digital Transformation’. Pp. 43–49 in Vol. 1.

Creswell, John W., and Cheryl N. Poth. 2017. *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. SAGE Publications.

Edvinsson, L., and M. Malone. 1999. *Intellectual Capital: Realizing Your Company’s True Value by Finding Its Hidden Brainpower*. Mazars Presents and Comments. Maxima.

Kaplan, Robert S. 2004. *Strategy Maps : Converting Intangible Assets into Tangible Outcomes*. Boston: Harvard Business School Press.

Khalil, W. I., M. O. Malik, and A. Ahsan. 2024. 'Sustainability Unleashed through Innovation: Knowledge-Driven Strategies Igniting Labor Productivity in Small- and Medium-Sized Engineering Enterprises'. *Sustainability (Switzerland)* 16(1). doi:10.3390/su16010424.

Lerro, A., R. Linzalone, and G. Schiuma. 2014. 'Managing Intellectual Capital Dimensions for Organizational Value Creation'. *Journal of Intellectual Capital* 15(3):350–61. doi:10.1108/JIC-05-2014-0063.

Lin, C. Y. Y., and L. Edvinsson. 2011. *National Intellectual Capital: A Comparison of 40 Countries*. National Intellectual Capital: A Comparison of 40 Countries.

Mahaputra, I. N. K. A., N. L. P. Wiagustini, I. K. Yadnyana, and N. L. G. S. Artini. 2021. 'Organization Behavior, Intellectual Capital, and Performance: A Case Study of Microfinance Institutions in Indonesia'. *Journal of Asian Finance, Economics and Business* 8(4):549–61. doi:10.13106/jafeb.2021.vol8.no4.0549.

Martinez-Gil, J., M. Pichler, G. Lentini, V. Mazzeschi, G. Doukhan, and C. Belet. 2022. 'A Digital Platform to Facilitate the Resilience of Rural Territories'. *Journal of Information and Knowledge Management* 21(3). doi:10.1142/S0219649222500435.

de Matos Pedro, E., J. Leitão, and H. Alves. 2020. 'Bridging Intellectual Capital, Sustainable Development and Quality of Life in Higher Education Institutions'. *Sustainability (Switzerland)* 12(2). doi:10.3390/su12020479.

Mazya, Thita M., Dodik Ridho Nurrochmat, Lala M. Kolopaking, Arif Satria, and Arya Hadi Dharmawan. 2023. 'Finding a Neue Gemeinschaft in Rural Indonesia: A Discussion of Forest Community Digital Transformation'. *Forest Policy and Economics* 148:102913. doi:10.1016/j.forpol.2023.102913.

N. R. Irmayani, H. Habibullah, B. Mujiyadi, N. Nurhayu, and R. G. Erwinsyah. 2022. 'Utilization of ICT in Maintaining Social Resilience in Rural Indonesia'. Pp. 1–7 in *2022 International Conference on ICT for Smart Society (ICISS)*.

Švarc, Jadranka, Jasminka Lažnjak, and Marina Dabić. 2021. 'The Role of National Intellectual Capital in the Digital Transformation of EU Countries. Another Digital Divide?' *Journal of Intellectual Capital* 22(4):768–91. doi:10.1108/JIC-02-2020-0024.

Vo, D. H., and N. P. Tran. 2021. 'Intellectual Capital and Bank Performance in Vietnam'. *Managerial Finance* 47(8):1094–1106. doi:10.1108/MF-03-2020-0143.

Vo, D. H., and N. P. Tran. 2022. 'Measuring National Intellectual Capital: A Novel Approach'. *Journal of Intellectual Capital* 23(4):799–815. doi:10.1108/JIC-06-2020-0183.

Vo, D. H., and N. P. Tran. 2024. 'Sectoral Intellectual Capital and Sector Performance in an Emerging Market'. *Montenegrin Journal of Economics* 20(2):209–20. doi:10.14254/1800-5845/2024.20-2.17.

Zhu, W., X. Dai, Y. Tian, X. Hu, and Z. Chao. 2020. 'How Intellectual Capital Combination Method Can Improve Corporate Performance in China's Information Technology Industry'. *IEEE Access* 8:4824–37. doi:10.1109/ACCESS.2019.2963060.