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OUTREACH CALL

D3 User Needs and Innovation Solutions Report

Economic Development Quality Monitoring System for the Vidzeme Region

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1. Executive Summary

The project has developed a **comprehensive strategy** to enhance the quality monitoring system for the economic development of the Vidzeme region, ensuring a **structured, data-driven, and effective** approach to fostering long-term sustainability. This strategy is anchored in **in-depth data analysis and active stakeholder engagement**, creating a **transparent and evidence-based** governance framework.

The proposed improvements include both **immediate enhancements** to optimize operational efficiency and **medium- to long-term development strategies** focused on **strengthening innovation, economic growth, and social well-being**.

1.1. Key Achievements

1. **Advanced Monitoring Mechanisms** – A high-level analysis of existing economic monitoring frameworks, assessing their **effectiveness, limitations, and areas for enhancement**.
2. **Support for High-Value-Added Sectors** – Strengthened regional capacity to **foster innovation-driven industries**, promoting the development of **high-value-added products and services**.
3. **Digital Transformation & Smart Technologies** – Identified and integrated **cutting-edge solutions**, including **AI-powered analytics and real-time monitoring systems**, to enhance **data accessibility and predictive analysis**.
4. **Strengthened Stakeholder Engagement** – Improved decision-making by incorporating the perspectives of **entrepreneurs, policymakers, and the public**, ensuring an **inclusive and participatory governance model**.

1.2. Alignment with EU Priorities

1. **Supporting Horizon Europe Objectives –** The project contributes to the digital transformation of the economy and enhances data-driven policy-making and governance.
2. **Advancing a Sustainable & Competitive Economy –** Strategic investments in green and sustainable economic development, reinforcing the competitiveness and resilience of the Vidzeme region.

1.3. Project relevance to regional challenges and opportunities

The project directly addresses key regional challenges and leverages opportunities to **enhance economic resilience, foster innovation, and strengthen stakeholder engagement**.

1. **Economic Resilience and Diversification** – The development of advanced **monitoring mechanisms** enhances the region's ability to **anticipate and adapt to external shocks**, ensuring long-term stability.
2. **Strengthening the Innovation Ecosystem** – Implemented solutions promote **regional competitiveness**, fostering a **dynamic, high-value-added economy** driven by technological advancements and knowledge-based industries.
3. **Enhanced Public and Business Participation** – Dedicated tools have been developed to **increase citizen and business involvement** in development planning, ensuring **a more inclusive and transparent governance process**.

1.4. Strategic improvements and innovations

1. **Real-Time Monitoring & Digital Platforms** – Identified and implemented **cutting-edge digital monitoring solutions** that provide **immediate, precise, and actionable economic insights** for tactical and strategic decision-making.
2. **Advanced Data Analytics** – Introduced **both short-term and long-term analytical methodologies** to optimize **decision-making efficiency**, improve forecasting accuracy, and enhance regional economic planning.

3. **Integration of Smart Digital Technologies** – Identified **innovative digital tools**, including AI-powered analytics and automated data processing systems, to **enhance the management and development of the regional economy**.
4. **Next-Generation Community Engagement Mechanisms** – Developed and outlined **new participatory frameworks**, enabling **more effective public involvement** in shaping regional development priorities.

1.5. Long-term benefits

The developed **guidelines for enhancing the regional economic monitoring system** will provide **sustained support for Vidzeme's economic growth**, enabling **more precise forecasting of economic trends, strengthening regional competitiveness, and optimizing resource allocation**. By implementing the **data-driven tools and strategic solutions** identified in the research, future development strategies will be **grounded in accurate, real-time economic insights**, ensuring a more **resilient and adaptive regional economy**.

1.6. Key Achievements of the Study

The research successfully accomplished its primary objectives:

1. **Enhancing Regional Economic Monitoring Mechanisms** – Established a **comprehensive framework** for tracking economic development, ensuring **data accuracy and comparability**.
2. **Strengthening the Monitoring of High-Value-Added Sectors** – Improved the ability to **analyse and support** the development of **innovation-driven industries and knowledge-based economies**.
3. **Promoting Effective Governance Models** – Introduced strategies to enhance **evidence-based policymaking and decision-making efficiency**.
4. **Boosting Innovation Support and Implementation** – Facilitated the **adoption of innovation-driven instruments** to foster **business growth, entrepreneurship, and technological advancement**.

1.7. Addressing Key Regional Challenges

1. **Economic Diversity & Resilience** – Developed advanced **monitoring mechanisms and strategic guidelines** to support **long-term, sustainable economic development**.
2. **High-Value-Added Economy** – Strengthened regional **monitoring and analytical capabilities** to **enhance competitiveness and support emerging industries**.
3. **Inclusive & Participatory Governance** – Established mechanisms to **increase stakeholder and citizen engagement** in decision-making processes.
4. **Innovation-Driven Growth** – Expanded the **utilization of innovation support tools** to empower businesses, foster entrepreneurship, and drive technological progress.

The study effectively complemented **existing Vidzeme Planning Region (VPR) initiatives**, enhancing economic data analysis capabilities and aligning development strategies with regional needs. By integrating **innovative digital solutions and real-time monitoring mechanisms**, the project has **significantly improved data-driven decision-making and strategic planning**. **Improving data analysis** – improved capabilities for more accurate and faster processing of economic data.

Key challenges included fragmented economic data collection, limited stakeholder participation and insufficient integration of digital technologies. The proposed solutions include the creation of a real-time monitoring system, providing both immediate tools for system improvement and medium- and long-term sustainable solutions, including data centralization and artificial intelligence analytics to improve decision-making and policy effectiveness.

2. Introduction

2.1. Significance and purpose of the study

Effective monitoring of regional economic development is a critical factor for ensuring sustainable and balanced growth throughout Latvia. The current situation demonstrates the lack of a unified, accurate data system, which in turn hinders timely and evidence-based decision-making at both the national and local government levels.

2.2. Project objective

1. **Identify existing data monitoring gaps**.
2. **Implement modern digital solutions,** including AI and big data analytics.
3. **Strengthen stakeholder involvement** in strategic planning processes.

2.3. Methodology

Quantitative and qualitative methods were used to collect data

- **Quantitative Analysis** – Comparative assessment of **regional economic data**, statistical **data modeling**, and **trend analysis**.
- **Stakeholder interviews and group discussions.**
- **International Best Practices** – Examined **successful economic monitoring models** from **Germany, Finland, and Sweden**, adapting **proven methodologies** to the Latvian context.

The Regional Development Indicators Module (RAIM) is being considered as a potential central platform for improving economic development monitoring. It is important to note that Latvian legislation establishes the RAIM as the only official system for regional development monitoring, preventing regions from establishing their own independent monitoring systems. To ensure the effective use of the RAIM, the study has identified necessary technical improvements, guidelines for improving the development of methodological guidelines and clarification of regulatory frameworks. At the same time, the study has identified ready-made real-time regional economic monitoring mechanisms for the regional administration, which the VPR can implement immediately and improve the existing regional economic monitoring.

2.4. Key Challenges and Legislative Needs

The study highlights several **critical obstacles** that hinder the effectiveness of economic monitoring and **underscore the necessity for legislative intervention**. These challenges primarily relate to **data decentralization, inconsistencies in system usage, technical limitations, and the underutilization of digital technologies**.

1. Data Decentralization and System Incompatibility

- Different **government levels rely on separate data systems**, leading to **fragmentation and inconsistencies**.
- The **lack of a standardized data format and structure** complicates **comparability, integration, and interoperability**.
- Municipalities operate **independent databases**, which are **not accessible to other institutions**, restricting **data sharing and collaboration**.
- **Timeliness and accuracy** of economic data are not consistently **verified or guaranteed**, limiting its **usefulness for decision-making**.

2. Limited Adoption of RAIM at the Municipal Level

- The use of the **Regional Economic Monitoring System (RAIM)** remains **voluntary**, with many municipalities opting for **alternative tools**, reducing **data coherence**.
- The **absence of clear regulatory guidelines** hinders the **standardized and effective**

application of RAIM.

- **Limited feedback mechanisms** prevent municipalities from receiving **refined analytical insights**, reducing the **value of collected data**.

3. Technical and Capacity Limitations

- **Insufficient training** on **data entry, processing, and analytical methodologies** leads to inconsistent data quality.
- Many municipalities **lack access to modern data processing tools**, limiting their ability to leverage **advanced analytics**.
- There is **no centralized technical support** for RAIM, making **troubleshooting and capacity-building more difficult**.

4. Underutilization of Digital Technologies

- **Manual data entry and processing** increase the risk of **errors and inefficiencies**.
- **Lack of system integration** results in **isolated data silos**, reducing the **potential for cross-sectoral insights**.
- The **absence of AI-driven forecasting tools** limits **predictive capabilities**, preventing **proactive economic planning**.

Legislative and Strategic Recommendations

Addressing these challenges requires a **legislative framework** that:

- ✅ **Mandates a unified, standardized data system** across all levels of governance.
- ✅ **Ensures the full integration and mandatory use of RAIM** for consistent economic monitoring.
- ✅ **Provides dedicated funding and training programs** to improve **technical capacity** at the municipal level.
- ✅ **Promotes AI-driven data analysis and automation** to enhance **forecasting and decision-making accuracy**.

2.5. Recommended Directions for Improvement

The research outlines **strategic recommendations** to enhance the **Regional Economic Monitoring System (RAIM)** by ensuring **greater integration, automation, and stakeholder engagement**. These improvements will foster **real-time data accessibility, predictive analytics, and transparent governance**, strengthening **evidence-based decision-making** at all levels.

1. Centralization and Integration of RAIM with National Databases

- Establish **seamless integration** between RAIM and key **national institutions**, including the **Central Statistical Bureau (CSP), the State Revenue Service (VID), and other relevant agencies**.
- Implement **automatic data exchange** to ensure **real-time information flow**, reducing **manual reporting inefficiencies** and improving **data consistency** across sectors.

2. AI-Driven Automation and Intelligent Data Processing

- Deploy **artificial intelligence (AI) and machine learning models** to **forecast economic trends** and provide **data-driven policy recommendations**.
- Introduce **automated data validation systems** to enhance **accuracy, consistency, and reliability**, reducing **errors and discrepancies** in economic reporting.

3. Public Engagement and Open Data Accessibility

- Develop an **interactive RAIM portal** to facilitate **public engagement** and encourage **citizen participation in regional economic development**.
- Implement **advanced data visualization tools**, enhancing **transparency and accessibility** for policymakers, businesses, and the general public.
- Ensure **open data availability**, fostering **collaborative decision-making** and enabling **stakeholders to leverage economic insights for strategic planning**.

4. Digital Tools for Enhancing Economic Development Monitoring

The Vidzeme Planning Region (VPR) is prepared to leverage advanced technologies to significantly improve economic monitoring, forecasting, and strategic planning. The recommended tools offer seamless integration, automated analysis, and intuitive interfaces, ensuring minimal implementation challenges while delivering high analytical value.

- ✓ The use of **LMT, TELE2, Bite, Google Maps API, and PTV Visum** will enable dynamic traffic flow management and improve transport efficiency. These tools will support municipal planning and business decision-making by providing predictive analytics on mobility trends. As a result, infrastructure development and public transport strategies will be optimized, leading to a more efficient use of resources.

- ✓ **Google Cloud AI** will provide machine learning-driven economic trend analysis, automating the assessment of regional economic indicators and reducing the need for manual analytical work. This tool will enhance predictive capabilities, offering strategic insights for more sustainable economic development planning.

- ✓ **IBM Watson** will be used for unstructured data processing and economic risk assessment. By identifying potential risks and market fluctuations, this tool will allow for more proactive responses to economic challenges. It will serve as a decision-support system for both public institutions and businesses, ensuring greater adaptability to changing economic conditions.

- ✓ **TensorFlow** will facilitate deep learning-based economic cycle modeling. By analyzing long-term investment trends and economic fluctuations, the system will generate automated economic scenarios and strategic recommendations based on historical data. This will enable decision-makers to make informed and forward-looking economic policy choices.

- ✓ **QGIS and ArcGIS** will be used for spatial data analysis and regional planning. These tools will enhance land use planning by providing detailed geospatial analysis. VPR planners will be able to model real-time territorial development scenarios, allowing for more precise and sustainable regional development strategies.

- ✓ **Power BI and Tableau** will improve business intelligence and data visualization. These tools will allow the creation of interactive dashboards that enhance data accessibility and comprehension among decision-makers. This will lead to more effective and transparent decision-making processes.
- ✓ By implementing these advanced digital solutions, the Vidzeme Planning Region can transform its economic monitoring approach into a strategic, real-time-based system. These technologies will provide greater accuracy, deeper analytical insights, and more efficient policy-making, ultimately driving sustainable and data-driven regional growth.

2.6. Key findings

Enhancing the monitoring of regional economic development in the Vidzeme Planning Region (VPR) requires an **integrated approach** that combines the **adoption of digital technologies** with **targeted policy reforms**. Achieving a more **efficient, data-driven monitoring system** will necessitate **strategic actions at both the policy and operational levels**.

From a **policy perspective**, VPR must take the lead in encouraging the **Regional Economic Monitoring System (RAIM)** by ensuring the establishment of a **unified data system**. This involves integrating **business data with the Central Statistical Bureau (CSB/ VID, etc.) databases**, enabling **automated data flow** and incorporating **artificial intelligence solutions** for **real-time data processing and predictive analytics**. At the **regional level**, efforts should focus on the **adoption of AI-driven digital solutions** that are already available within **management institutions**. These technologies, offered by industry participants, provide **scalable solutions** for enhancing economic data analysis and decision-making processes. The detailed capabilities of these tools are outlined in the full research report.

The **long-term advancement of regional economic monitoring** will depend on **potential regulatory changes, strengthened technical infrastructure, and active participation from VPR** in the **implementation and optimization of AI-driven digital solutions**. Ensuring **continuous investment in digital transformation and cross-sector collaboration** will be essential for maintaining **a modern, efficient, and future-ready economic monitoring framework**.

3. Implementation

The project was implemented in December 2024 - February 2025, following **three main stages**

1. **Analysis of the current situation** - Data collection, stakeholder interviews.
2. **Development of digital solutions** – evaluation of AI models, economic forecasting tools.
3. **Analysis of results and recommendations.**

The implementation of the research project was organized over a three-month period from the beginning of December 2024 to February 28, 2025, encompassing structured data analysis, stakeholder engagement, and the development of detailed proposals for improving regional economic monitoring. The research strategy was based on a scientifically sound approach that combined quantitative and qualitative methods, providing a comprehensive view of existing monitoring mechanisms and their improvement opportunities. The main challenges were related to data incompatibility between state and local government systems → addressed through simulated scenarios with the development of automated connections between existing databases.

3.1. Main activities carried out

To ensure the high quality and practical applicability of the study, a multi-stage analytical and consultative process was implemented, which allowed for a deep understanding of the functioning of the existing regional economic monitoring system, its shortcomings and development opportunities. The set of activities performed formed a structured approach based on both international experience and the specific context of the region and the needs of stakeholders.

- **Analysis of existing regional economic monitoring mechanisms.** The project conducted a comprehensive mapping of existing monitoring mechanisms and assessed their effectiveness, analyzing data collection methods, governance structures and indicators used. To identify the best strategies, the study drew on international good practices, including the Finnish smart economy governance model, the German cluster approach and Canada's digital regional development strategies.

- **Data gaps and inefficiencies.** The project carried out an in-depth comparison of structured data sources, analysing both national statistical resources and regional government databases. Key gaps were identified, such as differences in methodology, data fragmentation and incompatibility between different systems. Based on this analysis, proposals were developed for data integration and harmonisation to ensure more reliable and comparable economic indicators.

- **Stakeholder engagement and consultation.** Stakeholder engagement was essential to develop a set of proposals based on real needs. Targeted working groups and interviews were organized with local government leaders, entrepreneurs, experts from academic institutions and representatives of state institutions. During the consultations, the most significant challenges in economic monitoring were highlighted and priorities for improving the system were defined. Entrepreneurs and academia particularly emphasized the need for artificial intelligence tools and real-time data analysis, while local government representatives pointed to the need for user-friendly data visualization platforms.

- **Development of proposals for an improved digital monitoring system.** Based on the analysis results and stakeholder recommendations, a set of proposals for a modernized regional economic monitoring system was developed. Solutions were proposed that integrate the strengths of the existing data infrastructure with modern technologies, including artificial intelligence algorithms, real-time data analysis tools and improved visualization capabilities. An assessment of the regulatory framework was also carried out to ensure coherence with national and European Union policy frameworks.

The implementation of the activities carried out ensured that the study not only identified existing problems, but also offered practical and innovative solutions that will contribute to sustainable and effective monitoring of the regional economy in the future.

3.2. Involved stakeholders

The research process ensured diverse and purposeful stakeholder engagement, which created a powerful synergy of ideas and proposals. The contribution of each group not only broadened the vision of the monitoring system, but also provided specific, practical recommendations for its improvement.

The 83rd International Scientific Conference of the University of Latvia played a special role, becoming a platform for constructive discussions and innovations. In this environment, academics, entrepreneurs and policymakers shared internationally recognized solutions and real-world application scenarios. The experience of Finland, Germany and Canada was particularly highlighted, demonstrating how data and digital technologies can become a driving force for regional development.
Stakeholder engagement provided concrete proposals in each area.

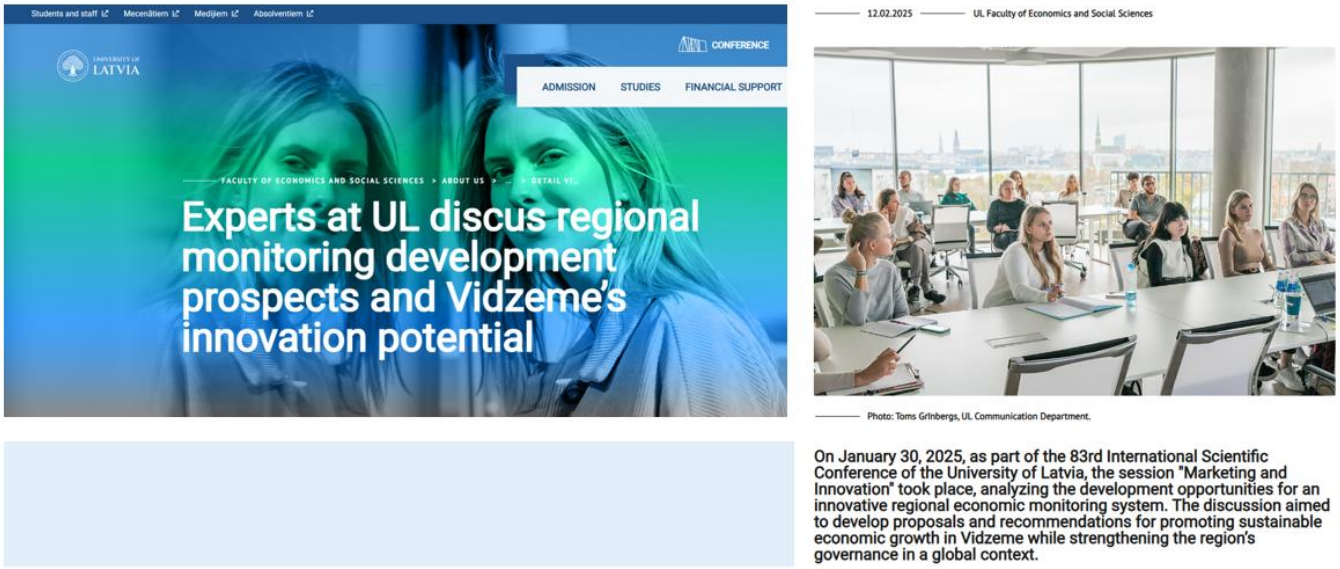
- **Academic environment.** Researchers from the University of Latvia and other leading educational institutions proposed the application of data analytics and forecasting models. They recommended the integration of AI and machine learning solutions that would ensure proactive development forecasting, more accurate data interpretation, and dynamic monitoring of economic activity.

- **Business sector.** Local entrepreneurs emphasized the need for real-time economic data availability that would allow for flexible adaptation to market trends. They proposed integrated business intelligence tools that would help companies better understand demand and optimize resource allocation, thus facilitating innovative, data-driven decision-making.

- **Municipalities and state institutions.** Representatives of regional and local governments emphasized the need for intuitive and user-friendly data visualization platforms that would facilitate strategic planning and decision-making. They proposed centralized management of regional economic indicators using a single digital dashboard that would facilitate cooperation between different institutions.

- **Society and NGOs.** Civil society representatives and non-governmental organizations highlighted the importance of transparency and citizen engagement. Their proposals included the availability of interactive public data that would allow the public to participate more actively in regional development decision-making.

A co-creation approach was encouraged, in which municipalities, entrepreneurs and citizens jointly define development priorities.



Picture 1. Discussion on the possibilities of the Vidzeme planning region economic development monitoring system at the 83rd International Conference of the University of Latvia. Source: University of Latvia home page. Available: Experts at UL discus regional monitoring development prospectus and Vidzeme's innovation potential/ 27.02.2025.

The active engagement of stakeholders and the collaborative development of innovative solutions have laid a strong foundation for an advanced and adaptable regional economic monitoring system. This multi-faceted approach has not only enhanced the system's efficiency but also ensured its responsiveness to emerging economic dynamics and policy needs.

By incorporating insights from academia, business, public institutions, and civil society, the project has fostered a data-driven, transparent, and participatory model of regional economic governance. The integration of cutting-edge technologies, real-time analytics, and intuitive decision-support tools enables more agile and informed strategic planning.

Moving forward, the established synergy between stakeholders will continue to drive the evolution of this system. The ongoing collaboration between policymakers, entrepreneurs, researchers, and the wider public will ensure that the monitoring framework remains a catalyst for economic resilience, innovation, and sustainable regional growth.

3.3. Challenges

During the research project, several significant challenges related to the methodological development of regional economic monitoring were identified and overcome. Over a three-month period from early December 2024 to late February 2025, the research team conducted a detailed situation analysis, stakeholder consultations, and adaptation of international experience to develop practical proposals for improving the monitoring system. The dynamic nature of the project and the intensive workflow required flexible adaptation, accurate data collection, and active participation of stakeholders.

- **Data fragmentation and availability.** One of the most significant challenges was the fragmentation and limited comparability of different regional economic data sources. During the study, significant differences in data quality and methodological standards were identified, which made in-depth analysis and trend forecasting difficult. To overcome this, a mapping of existing data systems was carried out and good practice examples from international regional governance models were

analyzed. Based on the experience of Finland, Germany and Canada, proposals were developed for a harmonized approach that provides more accurate and easier to interpret economic indications.

- **Stakeholder participation and knowledge sharing.** To ensure a comprehensive view of the possibilities of regional economic monitoring, targeted consultations and working groups were organized with academia, entrepreneurs, state administration and society. In the discussion format, stakeholders identified the most significant shortcomings of the system and provided practical recommendations for improvements. For example, academia and business representatives proposed introducing solutions based on artificial intelligence and big data analysis, which would ensure more accurate forecasts and better resource planning. In turn, representatives of the administration emphasized the need for simpler and more intuitive data visualization, which would facilitate strategic planning processes.

- **Technical barriers and methodological precision.** During the research, several technical and methodological difficulties related to the development of monitoring systems were also identified. For example, different state institutions have different data collection approaches, which did not contribute to a unified interpretation. As part of the project, pilot studies were conducted in the working team to test various digital tools and assess their adaptability to the needs of the region. As a result, specific recommendations were developed for the standardization of the methodology and the implementation of technical solutions in the future.

3.4. Risk encountered and mitigation strategies applied

During the project implementation, several critical risks were identified that could affect the effectiveness of the research process and the usefulness of the obtained results. To ensure that these challenges are overcome and the improvement of regional economic monitoring becomes a sustainable and effective process, targeted risk mitigation strategies were developed.

- **Data quality and availability.** One of the most significant risks was the shortcomings, different methodologies and limited availability of regional economic data. To address this problem, specific recommendations were developed to improve the RAIM data collection system, ensuring reliable and consistent information for further analysis. In addition, mechanisms were established for data verification and harmonization, which will reduce uncertainties and improve the comparability of indicators across regions.

- **Sustainability of the results obtained in the project.** To ensure that the research results do not remain only at a theoretical level, several development scenarios were developed that provide for the systematic improvement of the monitoring system even after the completion of the project. These scenarios included specific steps to ensure regular data updates, cooperation with municipalities and state institutions, as well as the integration of digital tools in the long term. At the same time, recommendations were prepared on the adjustment of regulatory frameworks to ensure that the monitoring system is fully included in regional development management.

The three-month research phase not only identified the challenges of regional economic monitoring, but also gave a significant impetus to the improvement of the system, creating the prerequisites for data-driven regional development planning. The developed solutions and proposals will allow the region to become more flexible, innovative and competitive, based on a modern, transparent and effective monitoring approach.

4. User Needs Assessment and Innovation Solutions

4.1. Identified Needs

Through stakeholder consultations, several critical challenges and gaps were identified that have hindered the effectiveness of regional economic monitoring and strategic development planning. The insights gathered underscored the necessity of a **coordinated, technologically advanced, and user-centric monitoring framework** to enhance decision-making and long-term growth.

1. **Establishing a Unified Economic Monitoring System.** The existing data collection mechanisms were found to be **fragmented and inconsistent**, relying on diverse data input formats that limited comparability and usability. Stakeholders emphasized the need for a **centralized and integrated system** that would ensure standardized, reliable, and easily interpretable economic indicators, fostering a **more structured and data-driven approach to regional development**.

2. **Enhancing Data Accessibility and Transparency.** Municipalities and businesses indicated that the lack of real-time economic data creates difficulties in planning and operational decision-making. Stakeholders stressed that economic data should be easily accessible for all relevant actors, intuitively visualized to support quick interpretation, user-friendly to facilitate informed decision-making at all levels.

3. **Strengthening Stakeholder Participation in Governance.** The consultations revealed insufficient involvement of SMEs, policymakers, and citizens in regional monitoring processes. To foster more inclusive and effective governance, stakeholders identified the need for:
    1. Collaborative engagement mechanisms that allow SMEs and local businesses to contribute insights
    2. Structured participation frameworks for policymakers and municipal representatives
    3. Citizen-driven platforms to integrate public feedback and enhance policy responsiveness

4. **Leveraging Digital Innovation for Smarter Monitoring.** Stakeholders unanimously called for the integration of cutting-edge digital tools to optimize economic monitoring and forecasting. The adoption of AI-driven analytics, big data processing, and automated predictive models was highlighted as a crucial step toward more precise economic forecasting, advanced scenario modeling for strategic planning, Data-driven decision-making that enhances regional competitiveness

By addressing these key challenges and implementing strategic improvements, the regional economic monitoring system can transition into a **highly efficient, transparent, and technology-driven framework**, empowering stakeholders with actionable insights for sustainable development.

4.2. Innovative Solutions

Based on the needs identified by stakeholders , specific solutions were developed aimed at introducing innovations and improving the efficiency of the regional economic monitoring system. These solutions ensure an integrated, data-driven management approach and improve the regional decision-making process.

- **Real-time data monitoring systems.** It was proposed to improve the RAIM regional digital platform by integrating SRS and CSB data with online dashboards and artificial intelligence analytics tools. This system will provide immediate access to economic indicators for regional representatives, facilitating development planning and allowing for prompt response to market fluctuations.

- **Digital integration and automation.** A need was identified for an API connection mechanism that would ensure efficient data exchange between regional, national and local government institutions. Automated

data entry and validation will improve accessibility, while reducing the likelihood of errors and facilitating faster decision-making.

- **Stakeholder collaboration platform.** To promote active stakeholder participation, digital forums and interactive tools were created to ensure open information exchange and cooperation between entrepreneurs, municipalities and the public. Such platforms are in line with the German and Swedish principles of multi-level governance, which contribute to more effective decision-making and regional policy.

- **Capacity building programs and digital skills development.** Training modules were developed for municipal employees and entrepreneurs on data analysis, forecasting and economic strategy development, ensuring sustainable and targeted use of the monitoring system.

4.3. International experience and best practice solutions

Stakeholder discussions actively analyzed examples of international experience that offer innovative solutions for improving regional economic monitoring.

- **Swedish model (RUS system, RAPS platform).** Stakeholders particularly praised Sweden's multi-level governance, which promotes public participation and efficient use of resources. It was noted that a similar approach, by legally enshrining regional development strategies, could help optimize investment flows and coordinate long-term development priorities.

- **The German cluster approach.** During the discussions, entrepreneurs and policymakers emphasized that the German cluster model, based on regional specialization, can be an effective way to promote innovation and competitiveness. They proposed introducing a similar model in Latvia to facilitate cooperation between SMEs, scientific institutes and public administration.

- **Finnish decentralized governance model.** Representatives of local governments noted that the Finnish approach, which ensures stable regional development financing and the development of public-private partnerships, is a good example of how to strengthen local autonomy and effectively use available resources.

- **Digital planning and data analysis systems.** Representatives of the academic environment emphasized that the implementation of the Lithuanian digital monitoring system demonstrates the need for a unified, integrated economic monitoring platform. It was noted that the effective use of digital tools would allow for better forecasting of economic development trends.

- **Public participation mechanisms.** Stakeholders critically assessed Latvia's current level of public engagement and acknowledged that the examples of Finland and Sweden show that digital participation platforms can be an effective tool for involving citizens in development decisions.

The results of the discussions confirmed that adapting and combining international good practice examples with local needs can be a significant factor in creating a modernized, effective and data-based regional development monitoring system.

5. Conclusions and Recommendations

5.1. Main Conclusions

The findings of the study confirm that the implementation of a **unified economic development monitoring system** significantly enhances **transparency, efficiency, and the responsiveness of regional governance** to economic and social challenges. By increasing **data accessibility and analytical capacity**, decision-making processes

become **more evidence-based**, enabling regions to **adapt more effectively to rapidly evolving economic conditions**.

The study identified several **critical factors** that determine the **effectiveness and long-term sustainability** of an advanced economic monitoring system:

- **Data Centralization and Integration** – The **fragmentation of economic information** weakens strategic decision-making. Establishing an **integrated platform** is essential to ensure **data consistency, interoperability, and real-time availability**.
- **Stakeholder Engagement Mechanisms** – A **structured approach to stakeholder participation** fosters **greater accountability in regional policymaking**, strengthens **collaborative governance**, and enhances **public trust in economic management processes**.
- **Application of Technological Innovations** – The **adoption of artificial intelligence and big data analytics** enables the development of **more accurate economic models**, facilitating **better forecasting and optimized regional planning**.
- **Adaptation of International Best Practices** – Comparative analysis of **successful regional development strategies** has demonstrated that **multi-level governance, participatory platforms, and private sector engagement** significantly enhance **economic resilience and innovation capacity**.

5.2. Recommendations for Enhancing Regional Economic Monitoring

To establish an **effective, data-driven, and sustainable** regional economic development monitoring system, the Vidzeme Planning Region (VPR) should take **proactive steps** to **improve RAIM**, integrate **advanced AI-driven analytics**, enhance **stakeholder participation**, and **adapt best international practices**. The following strategic recommendations outline key actions to ensure the **long-term efficiency and accuracy** of the monitoring system.

1. Strengthening RAIM Through Legislative Initiatives

- VPR should develop and advocate for **legislative amendments** to establish **RAIM as the mandatory and standardized regional economic monitoring system**.
- RAIM should be **fully integrated** with **national data sources**, including the **State Revenue Service (VID) and Central Statistical Bureau (CSP)**, enabling **automated data flow, real-time processing, and improved decision-making accuracy**.

2. Capacity Building and Implementation of AI-Driven Analytics

- VPR should implement **AI-powered tools** identified in the study to **enhance economic forecasting, real-time data processing, and trend analysis**.
- To ensure effective adoption, VPR should **expand training programs** for **regional administration employees**, equipping them with **skills in artificial intelligence, data analytics, and digital economic monitoring tools**.

3. A New Approach to Stakeholder Engagement

- Instead of solely **requiring entrepreneurs to participate in monitoring processes**, VPR should establish **Civic Economy Monitoring Councils**, bringing together **academic institutions, NGOs, and independent experts** to ensure **structured and informed decision-making**.
- A **regional feedback mechanism** should be introduced, allowing **entrepreneurs, businesses, and residents** to easily provide **real-time input** on economic trends and monitoring results, ensuring **more inclusive and participatory governance**.

4. Adapting International Best Practices to Vidzeme's Context

- **Swedish Model for Regional Development Councils** – VPR should establish a **regional development council** inspired by Sweden's approach, which **coordinates long-term investments and fosters stronger public-private collaboration**.
- **German Cluster-Based Economic Development** – Vidzeme should **strengthen industry clusters**, particularly in the **green economy, IT sector, and biotechnology**, to **enhance competitiveness and innovation-driven growth**.
- **Finland's Decentralized Governance Model** – To **empower local decision-making**, VPR should continue promoting **local government autonomy in economic monitoring**, while simultaneously **centralizing high-quality data and establishing methodological guidance** within RAIM to ensure **consistency and accuracy**.

5.3. Expected Impact and KPI Assessment

The implementation of these solutions is expected to lead to a **significant increase in the efficiency of regional management**, enhancing **data accuracy, decision-making processes, stakeholder engagement, and technological capacity**. The impact of these improvements will be measured through key performance indicators (KPIs) to ensure progress and accountability.

1. Enhanced Economic Data Availability and Analytics Capacity

A unified **Regional Economic Monitoring System (RAIM)** will be established, integrating **one-stop data entry** from the **Central Statistical Bureau (CSB) and the State Revenue Service (VID)**. This will ensure a **continuous, real-time data flow**, improving economic forecasting and decision-making accuracy.

The integration of **artificial intelligence algorithms** will enable **automated data processing and predictive analytics**, facilitating **efficient economic trend modeling**. The ultimate goal is to develop a **fully operational AI-powered analytics system** with **API connections to national databases**, ensuring **real-time monitoring and insights**.

2. Improved Data Utilization in Decision-Making

Regional and municipal leaders, along with development planners, will gain access to **up-to-date, high-precision economic indicators**, empowering them to make **strategically sound, evidence-based decisions**.

KPI Target: At least **80% of regional governments actively utilize RAIM data** in development planning, leading to more informed and responsive policymaking.

3. Strengthened Stakeholder Engagement and Feedback Mechanisms

An **Economic Monitoring Council** will be established in the region, fostering **structured collaboration** between academia, **NGOs, policymakers, and independent experts**. This council will facilitate **continuous dialogue** and ensure that economic monitoring efforts are aligned with **regional development goals**.

Additionally, **digital platforms and interactive tools** will be deployed, allowing **stakeholders to participate in monitoring processes** and contribute to regional policy formulation.

KPI Target: The **Economic Monitoring Council is fully operational**, functioning both **digitally and through in-person engagements**, ensuring **evidence-based economic governance**.

4. Implementation of AI Solutions and Capacity Building for VPR

VPR are recommended to integrate **advanced AI-driven digital tools** identified in the study, **enhancing economic monitoring efficiency and forecasting capabilities**. In parallel, a **comprehensive training program** should be implemented for local government officials and regional development specialists, ensuring the **sustainable application of AI technologies**.

KPI Target: VPR has **fully integrated AI solutions** identified in the study and successfully **trained its personnel**, ensuring the **long-term sustainability and scalability** of these technological advancements.

By implementing these recommendations, **regional economic monitoring** will be transformed into a **dynamic, AI-powered strategic management tool**, driving **innovation, regional competitiveness, and sustainable economic growth**. The structured use of **real-time data, predictive analytics, and stakeholder collaboration** will position **Vidzemes Planning Region as a leader in data-driven regional governance**, ensuring long-term economic resilience and development.

6. Annexes

6.1. Detailed research document
6.2. Press release on the stakeholder discussion held at the University of Latvia within the framework of the 83rd international scientific conference

Expenses Report for Project Implementation

Budget Item	Costs in Euro	Justification
		Eight scientists participated in the project,