



The Team Project “Smart Specialisation Priorities of the Region and the S3 Platform Joining” as an Effective Educational Activity for Developing Smart Specialisation Skills in Master's Students¹

UDC 332.14:352:353(061.1EU)

DOI: <https://doi.org/10.15421/152625>

D4

Mamatova Tetiana

Dr.Sc., Full Prof., <https://orcid.org/0000-0003-1844-5377>, mamatova.t.v@nmu.one

Chykarenko Iryna

Dr.Sc., Full Prof., <https://orcid.org/0000-0001-7381-7773>, chykarenko.i@nmu.one

Borodin Yevgeniy

Dr.Sc., Full Prof., <https://orcid.org/0000-0002-7331-5981>, borodin.ye.i@nmu.one

Pavlenko Liudmyla

Ph.D., Assoc. Prof., <https://orcid.org/0009-0006-6117-9624>, pavlenko.l.v@nmu.one

Dnipro University of Technology (Dnipro, Ukraine)

Abstract.

Relevance. Strategic planning for regional and local development using the smart specialisation methodology has for many years remained one of the key challenges for public administrators and policymakers in both the European Union and Ukraine. There is still a pressing issue: a deficiency of qualified public administration professionals capable of designing development strategies based on the implementation of best European practices (who possess the relevant professional competencies and Smart Specialisation skills). The implementation of the project “Smart Specialisation: Spreading the Experience of European Regions and Communities” (EU-Smart), carried out under the ERASMUS+ programme, has contributed to resolving actual problem.

Results. This article provides an overview of the content and scope of the team Project “Smart Specialisation priorities of the region and the S3 Platform joining” as part of an elective course for Master’s students, which was implemented under the EU-Smart project at Dnipro University of Technology during 2023-2026. It highlights the results and assesses the effectiveness of this type of educational activity in developing smart specialisation skills among future civil servants. To determine the students’ level of satisfaction with the course, surveys were conducted. The results indicated a high level of satisfaction with both the course as a whole and students’ participation in the Team Project and its presentation at the Project Fair, which included a poster session attended by expert practitioners in regional and local development. Taking into account the views of Master’s students and other stakeholders involved in the teaching process, this learning activity contributed to the achievement of the overall course and project objectives.

Keywords: public administration, smart specialisation, region, local community, professional competence, public servants, project management

Командний проєкт «Пріоритети смартспеціалізації регіону та приєднання до платформи S3» як ефективна освітня діяльність для формування навичок смартспеціалізації у здобувачів магістратури

Маматова Тетяна, Чикаренко Ірина, Бородин Євгеній, Павленко Людмила
Національний технічний університет «Дніпровська політехніка» (Дніпро, Україна)

Анотація.

Актуальність дослідження. Здійснення стратегічного планування регіонального і місцевого розвитку за методологією смартспеціалізації вже багато років залишається одним з ключових викликів для публічних управлінців як в Європейському Союзі, так і в Україні. Залишається актуальною проблема: брак фахівців органів публічного управління, які спроможні розробляти стратегії розвитку на основі впровадження найкращих європейських практик (які володіють відповідними складовими професійної компетентності та «навичками у сфері смартспеціалізації»). Реалізація проєкту «Смарт-спеціалізація: поширення досвіду європейських регіонів і громад» (EU-Smart), що реалізується в межах програми ERASMUS+ сприяє розв’язанню визначеної проблеми.

Результати дослідження. У статті надано огляд структури та призначення командного проєкту «Пріоритети інтелектуальної спеціалізації регіону та приєднання до платформи S3» у структурі вибіркової навчальної дисципліни для здобувачів другого (магістерського рівня вищої освіти), який реалізовувався в рамках проєкту EU-Smart в НТУ «Дніпровська політехніка» у 2023–2026 роках. Висвітлено результати та оцінено результативність даного виду навчальної активності у формуванні навичок смартспеціалізації у майбутніх публічних службовців. Для визначення рівня задоволення навчанням за дисципліною проводились опитування, під час яких здобувачі зазначили високий рівень задоволення як дисципліною загалом, так і участю у командному проєкті та його презентації під час Ярмарку проєктів із постерною сесією за участі експертів-практиків регіонального та місцевого розвитку. З урахуванням думки здобувачів і залучених до процесу реалізації навчання інших стейкхолдерів, можна констатувати, що реалізація цієї початкової активності сприяла досягненню цілей курсу і проєкту в цілому.

Ключові слова: публічне управління, Smart-спеціалізація, регіон, місцева спільнота, професійна компетентність, державні службовці, управління проєктами

¹This publication was prepared as part of the project «Smart Specialisation: Spreading the Experience of European Regions and Communities» – 101127333 – EU-SMART – ERASMUS-JMO-2023-HEI-TCH-RSCH.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor the granting authority can be held responsible for them.

Стаття надійшла / Article arrived: 14.07.26 // Схвалено до друку / Accepted: 21.08.26 // Підписано до друку / Approved for printing: 25.08.26



Introduction.

Relevance. Smart Specialisation, which emerged as a part of the reformed Cohesion Policy of the European Commission, is a local approach characterized by the identification of strategic areas for intervention based on an analysis of the strengths and potential of the economy of the territory/region, and the Entrepreneurial Discovery Process (EDP), with wide involvement of stakeholders (European Court of Auditors, 2025). It is outward-looking and takes a broad view of innovation, including but not limited to technological approaches supported by effective monitoring mechanisms. This approach is recognized and widely tested in the European Union. Smart Specialisation is the collective process that more than 180 European regions and 19 countries are currently using to identify their strengths and their opportunities (Chikarenko & Mamatova, 2022).

In Ukraine, the roll-out of European smart specialisation has been ongoing since 2015, when this approach was identified as a component of the process of regional development strategy design (Кабінет Міністрів України, 2015; Міністерство регіонального розвитку, будівництва та житлово-комунального господарства України, 2016). All regions of Ukraine stated in their own strategies for the period 2020–2026 that they had identified priorities for smart specialisation. In 2024, specific guidelines were drawn up at national level, setting out in detail the requirements for applying the approach (Міністерство економіки України, 2024); these are currently being used to update regional development strategies under the legal framework of martial law. At the same time, experts note that the smart specialisation methodology and the best practices of European regions and local communities are not being utilised to their full potential (Chikarenko & Mamatova, 2022).

In this context, at the end of 2022, the authors identified a complex problem, the essence of which can be briefly summarized by the following two key contradictions:

1. Between the need for regions and communities in Ukraine to implement Smart Specialisation processes at the level of established European practices in this area and insufficient awareness of S3 methodology, tools, and best practices both in public administration bodies and among business and civil society representatives.

2. Between the existence for the need of state authorities and local self-government bodies for public servants who have systematic knowledge of the Smart Specialisation methodology and instruments for the development of the region's development

strategies based on the implementation of the European experience and best practices, and the lack of specialists capable of such activities (who have relevant components of professional competence and Smart Specialisation skills).

The project “Smart Specialization: Spreading the Experience of European Regions and Communities” (EU-Smart) became a response to current realities, trends, and developments, as well as to the above-mentioned challenges and problems of strategic territorial and community development. Addressing these issues, particularly, under the legal regime of martial law in Ukraine, is extremely relevant and important for the country's reconstruction, the restoration of its critical infrastructure, and the sustainable development in the post-war period. The project was submitted to the European Commission's call for proposals in February 2023 and subsequently received a positive evaluation along with the corresponding funding (Erasmus+, n.d.).

The primary objective of the EU-Smart project, implemented by the Project Team over a three-year period (2024–2026), is to prepare highly qualified and motivated specialists with developed Smart Specialisation skills who are able to develop and implement regional Smart Specialisation Strategies (S3) and development strategies of territorial communities based on the study of leading experience and best practices of the EU.

The purpose of the study is to provide an overview of the content and scope of the team project “Priorities for Regional Smart Specialisation and Joining the S3 Platform” as part of an elective course for Master's students, which was implemented under the project “Smart Specialisation: Spreading the Experience of European Regions and Communities” (EU-Smart) at Dnipro University of Technology between 2023 and 2026. To describe the outcomes and evaluate the effectiveness of this type of learning activity in developing Smart Specialisation skills among future civil servants.

Review of previous publications. Recently, scientific literature has begun to devote increasing attention to the implementation of Smart Specialization as one of the priorities of regional and local development (Smart Specialization Strategy – S3), as well as to the dissemination of European countries' experience in this area. Research conducted over the past fifteen years by the Joint Research Centre of the European Commission (Joint Research Centre, n.d.) has provided the scientific foundation for implementing the Smart Specialization approach in EU countries (Foray, David & Hall, 2009; Foray, 2015; Gianelle, Kyriakou, Cohen & Przeor, 2016; Hegyi & Rakhmatullin, 2017; Marinelli & Perianez For-

te, 2017) and has served as a basis for subsequent academic studies by both international (Gianelle, Guzzo & Mieszkowski, 2019; Kyriakou, Palazuelos Martínez, Periañez-Forte & Rainoldi, 2019; Larrea, Estensoro & Pertoldi, 2019; McCann, van Oort & Goddard, 2019; Foray, Eichler & Keller, 2021; Hegyi et al., 2021; Giustolisi, Benner & Tripp, 2022) and ukrainian domestic scholars (Смельянов & Козлова, 2019; Сорока, 2019; Єгоров, 2020; Возняк, 2021; Єгоров, 2021; Сторонянська, 2022; Чикаренко & Маматова, 2022) in developing the theoretical and methodological frameworks for strategy development processes based on the identification of regional Smart Specialization.

A review of the literature covering the period 2023–2026 has revealed that, in European Union countries, Smart Specialization is as a key instrument that integrates the outcomes of strategic analysis with the entrepreneurial discovery process (Kruse, Somcutean & Wedemeier, 2023; Reimeris & Laranja, 2024; Титаренко, 2024; Маматова, Чикаренко & Бородин, 2025a; Lien, 2026), prioritizes the implementation of innovations (Reid, Steward & Miedzinski, 2023; Pérez & Marinell, 2023; Pinto, Laranja & Uyarra, 2024; Rodríguez Ochoa, Arran & Fernandez de Arroyabe, 2025), and positions economic transformation programs as a central focus of regional smart specialization strategies (European Commission et al., 2024; European Court of Auditors, 2025; Ляшенко, 2025) and their shift toward sustainability (Sustainable Smart Specialisation, S4) (Directorate-General for Regional and Urban Policy, 2025; Directorate-General for Regional and Urban Policy, 2026). Early results are available from research into the mechanisms for implementing the smart specialisation approach in the context of the war and subsequent post-war recovery in Ukraine (Пуліна, Бут & Пешиков, 2023; Шацька & Когут, 2023; Корчинська, 2026).

Some research also highlights the importance of investing in skills development – which is essential for professionals involved in territorial development processes – using various sources of funding, as well as factors that reflect territorial differences, such as the positive territorial correlation between high levels of investment in S3 skills and thriving innovation ecosystems (Бородин & Маматова, 2023; European Commission et al., 2024).

At the same time, it must be noted that, despite a significant amount of research in this field, insufficient attention has been paid to training specialists

with advanced skills in implementing standardized European Smart Specialization practices, justifying them, and introducing them at the regional level.

For this reason, the authors developed a collaborative project aimed at disseminating European experience and best EU practices, which received funding in 2023 and was successfully implemented at Dnipro University of Technology. The project aimed to conduct educational activities that develop master's students' skills in identifying regional Smart Specialization priorities and incorporating these priorities into the development strategies of local communities and the region as a whole.

Research findings.

To achieve the primary objective of the project (to develop students' skills in identifying and justifying regional Smart Specialisation priorities in accordance with the requirements of the European Commission and aligned with European standards, regulations, and procedures) a new elective course, “Smart Specialisation: Spreading the Experience of European Regions and Communities”, was developed for Master's-level educational programs. The target group consisted of full-time students enrolled in management-related degree programs, namely: “Public Management and Administration”, “International Relations, Public Communications, and Regional Studies”, “Management”, and “Entrepreneurship, Trade, and Exchange Activities”. The course is part of the elective component of the curriculum for each of the designated educational programs. Students selected the course during the first semester of the first academic year, and it was delivered in the second semester of the same academic year, lasting 19 weeks at 6 hours per week, for a total of 120 teaching hours. The course was implemented over three academic years, with a total of 50 students participating.

For the logical presentation of the Smart Specialisation approach and tools and the gradual formation of the Smart Specialisation competences and skills, the course is divided into three Thematic Modules: Smart Specialisation: the Methodology (10 lectures hours, 20 practical classes hours); Smart Specialisation Strategy (S3): the Instruments (14 lectures hours, 28 practical classes hours); Smart Specialisation Strategy (S3): the European Experience Spreading (16 lectures hours, 26 practical classes hours) (Маматова, Чикаренко & Бородин, 2025b).



Table 1
“Smart Specialization: Spreading the Experience of European Regions and Communities”:
thematic course structure

Lecture/ Practical classes	Topic	L,h	PC, h
Modul 1 – Smart Specialisation: Methodology			
Lecture 1.1	Smart Specialisation within the reformed Cohesion policy of the European Commission	2	-
Practical classes 1	Round Table «Priorities and Challenges of The European Commission’s priorities»	-	4
Lecture 1.2	Smart Specialisation Strategy (S3)	4	-
Practical classes 2	Case-study «S3 Development: European Regions' Experience»	-	4
Practical classes 3	Group presentation «Regional priorities of smart specialization: projection on Ukraine»	-	4
Lecture 1.3	The New European Innovation Agenda & Smart Specialisation	2	-
Practical classes 4	Debates «Fostering innovation ecosystems and bridging the innovation gap between EU countries: contribution of S3»	-	4
Lecture 1.4	Entrepreneurial Discovery Process (EDP)	2	-
Practical classes 5	Groupe discussion «How to involve a wide range of stakeholders into the EDP: a ‘journey’ with no start or end»	-	4
Modul 1		10	20
Modul 2 – Smart Specialisation Strategy (S3): Instruments			
Lecture 2.1	EC Smart Specialisation Platform: structure and capabilities	2	-
Practical classes 6	Master class «S3 Tools for facilitating interregional cooperation and the creation of partnerships among various actors throughout Europe»	-	4
Lecture 2.2- 2.3	Inter-territorial cooperation is a key element on the implementation of the S3 model: empowering the EU regions & communities	4	
Practical classes 7	Public presentation «4 EU Macro-Regional Strategies»	-	4
Practical classes 8	Debates «Smart Specialisation empowering the EU regions & communities»	-	4
Lecture 2.4	Smart Specialisation for Sustainable Development Goals in Europe	2	-
Practical classes 9	Case-study «Smart Specialisation Strategy in Serbia»	-	4
Lecture 2.5	Joining the S3 Platform: requirements, procedure, benefits for regions and communities in the EU and beyond	2	-
Practical classes 10	Team Project «Smart specialization Priorities of the region and joining S3 Platform»	-	4
Lecture 2.6-2.7	ESPON: an EU funded programme that bridges research with policies	4	-
Practical classes 11	Policy Paper Workshop «Entrepreneurial Regional Governance in Europe regions and communities»	-	4
Practical classes 12	Master class «ESPON’s SDGs benchmarking tool: supporting to European governments at all levels in localising and achieving the SDGs»	-	4
Modul 2		14	28
Modul 3 –Smart Specialisation Strategy (S3): European Experience			
Lecture 3.1	S3 Implementation in European Regions and Communities	4	-
Practical classes 13	Groupe discussion «S3 Implementation in European Regions and Communities»	-	4



Lecture/ Practical classes	Topic	L,h	PC, h
Practical classes 14	Team Project «Smart specialization Priorities of the region and joining S3 Platform»	-	4
Lecture 3.2	Education and Skills for S3: a specific objective for investment within the Smarter Europe objective	4	-
Practical classes 15	Case study «The HESS case studies: projection on the region and community's education level»	-	8
Lecture 3.3	Smart Specialisation Framework for EU Enlargement and Neighbourhood Region (S3 Framework)	4	-
Practical classes 16	Policy Paper Workshop «EaP countries domains' identification in EC projects»	-	8
Lecture 3.4	Spreading Experience of EU Regions 3S in Ukraine	4	-
Practical classes 17	Project Fair with Poster session «Smart specialization Priorities of the region and joining S3 Platform»	-	8
Modul 3		16	32
COURSE		40	80
		120	

Source: (Маматова, Чикаренко & Бородин, 2025b).

Teaching combined lectures with practical classes and work on a cross-cutting team project. Lectures were problem-based, interactive, supported by presentations, audio and video materials (if necessary). All course materials were posted in the corporate MS Teams and on the university e-learning platform (Moodle). In this way, students and teachers were able to participate in the learning process online and asynchronously, if necessary, while staying in touch at all times.

The types of practical classes were selected to optimally facilitate the mastery of the relevant topics and the development of Smart Specialisation skills: a round table, group presentations, debates, case-studies, group discussions, policy paper workshops. Relevant active learning methods were used during the classes: small group activities, brainstorming, facilitation within groups, Knowledge Caffe, etc.

Specifically, lectures of Thematic Modul 1 (Lecture 1.1-1.4) covered the following issues: Smart Specialisation within the reformed Cohesion policy of the European Commission; Smart Specialisation Strategy (S3); The New European Innovation Agenda & Smart Specialisation; Entrepreneurial Discovery Process (EDP). As a result, students acquired foundational knowledge of the Smart Specialisation approach and its role in strengthening EU processes, as well as mastering the fundamentals of the S3 development methodology.

Moreover, to develop students' Smart Specialisation skills, the first thematic block included a number of relevant learning activities: Round Table

“Priorities and Challenges of The European Commission's priorities” (1); Case-study “S3 Development: the European Regions Experience” (2); Group presentation “Regional priorities of Smart Specialisation: a projection on Ukraine” (3); Debates “Fostering innovation ecosystems and bridging the innovation gap between EU countries: a contribution of S3” (4); Groupe discussion “How to involve a wide range of stakeholders into the EDP: a “journey” with no start or end” (5). The selected types of practical classes contributed to the development of specific soft skills among the students.

Building on the foundational knowledge and skills developed in Thematic Module 1, Thematic Module 2 focused on the study of EU Smart Specialisation advanced digital tools and resources for promoting innovative and sustainable development of regions and communities, as well as enhancing the policy-making capacity of public administration bodies (Lecture 2.1-2.6). Thematic Module 2 covered the following issues: EC Smart Specialisation Platform: a structure and capabilities; Interregional cooperation is a key element on the implementation of the S3 model: an empowering the EU regions & communities; Smart Specialisation for Sustainable Development Goals in Europe; S3 Community of Practice; Joining the S3 Platform: requirements, procedure, benefits for regions and communities in the EU and beyond; ESPON: an EU funded program that bridges research with policies.

Furthermore, practical classes in Thematic Module 2, built upon the theoretical knowledge acqui-



red in the lectures, continued to develop students' Smart Specialisation skills through applied exercises: Master class "S3 Tools for facilitating cooperation and creating partnerships among various actors throughout Europe" (6); Public presentation "4 EU Macro-Regional Strategies" (7); Debates "Smart Specialisation empowering the EU regions & communities" (8); Case-study "Smart Specialisation Strategy in Serbia" (9); Policy Paper "Entrepreneurial Regional Governance in Europe regions and communities" (11); Master class "ESPON's SDGs benchmarking tool: supporting to European governments at all levels in localizing and achieving the SDGs" (12).

During two practical classes of Thematic Module 2 (10), the cross-cutting Team Project "Regional Smart Specialisation Priorities and Integration into the S3 Platform" was launched, providing students with an opportunity to apply theoretical knowledge in a practical, collaborative context. The teams were involved in the design and submission of proposals for improving the region and territorial communities' strategies and design local development projects based on the best practices of European Smart Specialisation. During practical classes 10, Master-student teams were formed, team roles were assigned, and team-building activities were conducted to foster collaboration and effective project work. Brainstorming and Creative search methods were applied to identify gaps that need to be bridged by the projects.

Following the practical experience gained through the Team Project, the lectures of Thematic Module 3 focused on studying the experience of EU regions and communities in implementing Smart Specialisation; approaches to its dissemination beyond the EU; processes of education and special Smart Specialisation skills development in the EU (Lecture 3.1-3.4): S3 Implementation in European Regions and Communities; Education and Skills for S3: a specific objective for investment within the Smarter Europe objective; Smart Specialisation Framework for EU Enlargement and Neighbourhood Region (S3 Framework); Spreading Experience of EU Regions 3S in Ukraine.

In addition, during the practical classes of Thematic Modul 3, students studied both relevant cases and get an information base for the implementation of the Team Project: Groupe discussion "S3 Implementation in European Regions and Communities" (13); Case study "The HESS case studies: a projection on the region and community's educational level" (14); Policy Paper "EaP countries domains' identification in EC projects" (15). During the practical sessions 14, students presented the preliminary

results of the Team Project, validated their findings and received recommendations from teachers and invited local government officials on improving the project and preparing for the Poster session. Subsequently, the results of the Team Project "Priorities of smart specialisation of the region and the S3 Platform joining" were represented within Thematic Module 3 in the Project Fair with Poster session (17), attended by representatives of the academic community, public authorities at the regional and local levels, civil society organizations, local businesses, and research institutions.

Original course materials were developed in Ukrainian (syllabus; lecturer's notes; presentations and guidelines for certain learning activities; criteria for assessing the success of students) and reviewed with the involvement of employers, academic staff, and students. To provide 24/7 access, the course materials were uploaded to the Dnipro University of Technology e-learning platform.

To attract motivated and ambitious students, the course was promoted during face-to-face sessions as part of the annual discipline selection campaign for the relevant study groups, on the university's information platforms (website, Telegram channels), and via social media. Students enrolled in the above-mentioned Master's programs (future civil servants, local government officials, public figures, business representatives, and others), who aspire to become effective members of local councils, public servants, top managers of local enterprises, entrepreneurs, heads of public associations, etc. were invited to participate in the course.

With regard to the first year of project implementation, it should be noted that within Topic 1, "Smart Specialisation: Methodology" (Lecture 1.1: Smart Specialisation within the Reformed Cohesion Policy of the European Commission, delivered by professor I. Chikarenko), the initial practical sessions (Practical Sessions 1) were conducted in an interactive round-table format "Priorities and Challenges in Implementing the Main Goals of the New EU Cohesion Policy for 2021-2027".

The student presentations delivered during the expert discussion and debate on the topic "Promoting the Development of Innovation Ecosystems and Bridging the Innovation Gap among EU Countries: The Contribution of S3" were particularly insightful. Professor T. Mamatova also contributed to the discussion. The discussion of this topic enabled participants to acquire new knowledge and deepen their understanding of the specifics of implementing relevant processes in EU countries, as well as recognize their role in rebuilding and ensuring the sustainable development of regions and communities in Ukraine.



During the study of Topic/Module 2, “Smart Specialisation Strategy (S3): Tools”, students became familiar with the structure and functionalities of the European Commission’s Smart Specialisation Platform and developed a clear understanding of interregional cooperation as a key component of the S3 model, which expands opportunities for EU regions and communities. Furthermore, a workshop “S3 Tools to Promote Cooperation and Build Partnerships among Various Actors across Europe”, along with debates on “Smart Specialisation as a Driver of Opportunities for EU Regions and Communities”, was successfully conducted. These activities were complemented by an analysis of the policy brief “Regional Entrepreneurial Governance in European Regions and Communities”.

In concluding the study of Topic/Module 2, students actively engaged in exploring aspects related to the localisation and achievement of the Sustainable Development Goals at all levels of governance within the framework of Smart Specialisation strategies. They explored and discussed the opportunities offered by digital platforms, including the Smart Specialisation Platform and ESPON, with particular attention to the SDG benchmarking tool. In addition, they familiarised themselves with the key findings of the Europe Sustainable Development Report 2023/24, as well as relevant specialised publications issued by the Publications Office of the European Union and ISO concerning the implementation of the SDGs.

A deeper understanding of the directions for disseminating the experience of European regions and communities in Ukraine was further enhanced by the participation of professor T. Mamatova and master’s students enrolled in the EU-SMART elective course in the leaders’ brainstorming session “Green Managers: Human Resources for the Green Recovery of Ukraine”, held on April 12, 2024. The event was initiated by the Association of Environmental Professionals with the support of the Office of Sustainable Solutions.

In May 2024, the study of Topic/Module 3 “Smart Specialisation Strategy (S3): European Experience” was completed mentored by prof. Y. Borodin. Subsequently, students actively worked in teams on the projects “Regional Smart Specialisation Priorities and Integration into the S3 Platform,” preparing for the main final course event – the Project Fair with a Poster presentation, which proved to be a valuable and novel experience for all participants. The final event, held on June 4, 2024, marked the completion of the first year of delivering the elective professional course “Smart Specialisation: Spreading the Experience of European Regions and

Communities” for master’s students enrolled in the “Public Management and Administration” program at Dnipro University of Technology. During the event, the results of three team projects were presented to a panel of distinguished experts representing regional and local public administration bodies, as well as the academic community. During the public presentation and defence of the team project results, a lively and constructive discussion took place. The experts offered valuable recommendations for both the further enhancement of the course curriculum and the refinement of the students’ project proposals.

Regarding the second and third years of the project implementation, the enrolment of the next two cohorts of Master’s students proceeded according to study plan, with all requirements and scheduled communication events successfully completed. At the ends of the second and third years of the course realisation, the EU-SMART 2025 and 2026 Project Fairs including a poster session, were also held. The events were attended by representatives of the academic community, regional and local public administration bodies, and civil society organisations. The university leadership, who participated in the events, emphasized the relevance of the elective course “Smart Specialisation: Spreading the Experience of European Regions and Communities” within the EU-SMART project, as well as the importance of fostering students’ practical skills in teamwork and enhancing their project-related competencies.

The student teams presented three projects in 2025: “Creating a Cluster for the Cultivation, Processing, and Marketing of Fruit, Berry, and Vegetable Products in Dnipropetrovsk Region”; “Creative Industry Development Initiative Based on the Local Cultural Heritage of Zakarpattia”; and “State Platform “E-Farm”, and three projects in 2026: “Defense innovation ecosystems of the EU in the context of smart specialization: the role of Ukraine and digital platforms”; “Youth spaces as platforms for social entrepreneurship and innovation”; “S3 digital platforms and digital healthcare”. Experts and practitioners from regional and local public administration bodies participated in the discussion of the projects and, as was the case during the first year of EU-Smart project implementation, provided valuable feedback and recommendations for the further improvement of the projects. The revised project proposals were subsequently presented at later EU-SMART project events, including the Regional Online Round Table, webinars attended by representatives from territorial communities in the Dnipropetrovsk region and the International Online Scientific and Practical Conference.



The MS-Form for surveying students on the results of the course was designed using the Likert-type scale Based on the recommendations of by W. M. Vagias (Vagias, 2026). Questions on course innovations and open-ended questions were added to the questionnaire to find out the opinion of master-students on certain issues.

The survey covered a range of questions, starting with the overall level of satisfaction with the course, specific questions regarding understanding of the course objectives, the quality of lectures and the value of practical sessions, the adequacy of time allocated for studying the material, opportunities to learn about best European and domestic practices, the transparency of assessment criteria and the assessment process etc. Among the specific questions related participation in the team project, respondents

were asked to rate two statements on a scale of 1 to 5: “Participation in the team project enhanced my understanding of the course material and contributed to the development of practical skills” and “Participation in the Project Fair with a poster session enabled me to engage in constructive dialogue with experts and practitioners”. Students were also asked to answer an open-ended question regarding their impressions of taking part in the Project Fair with a poster session.

Overall, the survey results indicate a very high level of satisfaction with the course, with 100 % of students assigning a rating of 5. The results regarding student satisfaction with their participation in the team project, the presentation and defence of its results are also extremely positive (Table 2).

Table 2
Selected results of a survey of master’s students assessing their level of satisfaction with an elective course within the EU-Smart project

Academic year	The overall level of satisfaction	The impact of the team project	
		Better understanding of the S3 methodology and acquiring S3-skills	Constructive discussions with experts at the Project Fair
2023-2024	5,00	4,93	4,93
2024-2025	5,00	4,86	5,00
2026-2026	5,00	5,00	5,00

Source: Authors, based on the results of an in-project survey.

It was also valuable for the project team to receive positive and constructive responses to the open-ended question. In particular, the Master’s students noted the following: “Participation in the project allowed to examine the problem from different perspectives and develop a more structured and high-quality form of the new project. It also provided an opportunity to meet experts from various fields and to consider diverse viewpoints on optimizing existing projects”; “It was a very valuable experience”; “It was GREAT, especially with the participation of the Deputy Head of the Regional State Administration”; “It was a good discussion and practical advice from the experts”; “We presented our projects and received recommendations from expert practitioners”; “I felt like an equal participant in the expert environment”; “I expressed my opinion, and the experts supported me”; “We were able to apply the knowledge and skills we had gained”.

Master-students also provided recommendations for improving the teaching of this elective discipline (“There was a lack of face-to-face sessions, which were not possible due to security concerns”; “It would be worth organising meetings with European experts in the field of S3”; “It would be great to get

involved in the work of a proper group tasked with updating the region’s strategy”), and proposed changes to the department’s educational programs for the following academic year, including converting the elective course into a compulsory component.

Based on the results of student satisfaction surveys and feedback from stakeholders (primarily potential employers and the students themselves), the course was improved after each of its three iterations, with adjustments and updates made in particular to incorporate the latest EU regulations, best European practices, and relevant experience.

Conclusions.

1. Strategic planning for regional and local development using the smart specialisation methodology has for many years remained one of the key challenges for public administrators and policymakers in both the European Union and Ukraine. The implementation of the project “Smart Specialisation: Spreading the Experience of European Regions and Communities” (EU-Smart), carried out under the ERASMUS+ programme, has contributed to resolving the problem of specialist deficiency capable to possess the relevant professional competencies and Smart Specialisation skills.



2. The cross-cutting Team Project “Regional Smart Specialisation Priorities and Integration into the S3 Platform” was launched, providing students with an opportunity to apply theoretical knowledge in a practical, collaborative context. The teams were involved in the design and submission of proposals for improving the region and territorial communities’ strategies and design local development projects based on the best practices of European Smart Specialisation. The main final course event – the Project Fair with a Poster presentation proved to be a valuable and novel experience for all participants.

3. To evaluate student satisfaction with the course, a survey was conducted. Surveys were carried out after each course was delivered during 2023-2026 academic years. The results indicated that the master-students provided a highly positive evalua-

tion of the course, recommendations for improving the teaching and proposed converting the elective course “Smart Specialization: Spreading the Experience of European Regions and Communities” into a compulsory component (within the specialized components of within the curriculum).

4. Upon completion of the course, master-students were able to implement the knowledge had gained and apply their Smart Specialisation skills within the pre-certification practice in regional authorities and local self-government bodies, as well as in the preparation of their master’s theses. It can also be confidently stated that the course graduates have developed smart specialisation skills, which they will apply in their future professional lives to ensure the resilience and sustainable development of the region and local communities.

БІБЛІОГРАФІЧНІ ПОСИЛАННЯ

- Бородін, Є., & Маматова, Т. (2023). Розвиток освіти та S3 навичок в межах «рамки смарт-спеціалізації регіону розширення та сусідства ЄС». *Аспекти публічного управління*, 11(1), 72-78. <https://doi.org/10.15421/152310>
- Возняк, Г. В. (2021). Теоретико-методологічні аспекти формування моделі смарт-спеціалізації регіонів України. *Регіональна економіка*, (2), 27-36. <https://doi.org/10.36818/1562-0905-2021-2-3>.
- Сторов, І. Ю. (Ред.). (2020). *Формування «розумної спеціалізації» в економіці України : колективна монографія*. Київ : НАН України, ДУ «Інститут економіки та прогнозування НАН України». <https://ief.org.ua/publication/monohrafi/2020/formuvannja-quotrozumnoi-specializaciiquot-v-ekonomici-ukrainy>.
- Сторов, І. Ю. (Ред.). (2021). *Інноваційна діяльність і формування смарт-спеціалізації в економіці України: колективна монографія*. Київ: НАН України, ДУ «Інститут економіки та прогнозування НАН України». https://www.researchgate.net/publication/366986981_Innovacijna_dialnist_i_formuvanna_smart-specializacii_v_Ukraini.
- Смельянов, В. М., & Козлова, Л. В. (2019). Особливості реалізації концепції smart-спеціалізації в Україні. *Публічне управління та регіональний розвиток*, (6), 777-801. <https://doi.org/10.34132/pard2019.06.04>.
- Кабінет Міністрів України. (2015). Про затвердження Порядку розроблення регіональних стратегій розвитку і планів заходів з їх реалізації, а також проведення моніторингу та оцінки результативності реалізації зазначених регіональних стратегій і планів заходів (Постанова № 932 від 11 листопада 2015 р.). <https://zakon.rada.gov.ua/laws/show/932-2015-p/ed20181117#n63>.
- Корчинська О. О. (2026). Трансформація концепції smart спеціалізації в контексті післявоєнної відбудови України. *Вчені записки ТНУ імені В.І. Вернадського. Серія: Публічне управління та адміністрування*, 37(1), 64-68. <https://doi.org/10.32782/TNU-2663-6468/2026.1/09>.
- Ляшенко, В. І. (ред.). (2025). *Адаптація стратегування смарт-спеціалізації в регіонах України : колективна монографія*. Київ : НАН України, Ін-т економіки пром-сті. <https://doi.org/10.37405/ASSSRU.2025>.
- Маматова, Т., Чикаренко, І., & Бородін, Є. (2025a). Процес підприємницького відкриття: методологія і кращі європейські практики. *Дніпровський науковий часопис публічного управління, психології, права*, (2), 17-22. <https://doi.org/10.51547/ppp.dp.ua/2025.2.3>.
- Маматова, Т. В., Чикаренко, І. А., Бородін, Є. І. (2025b). *Силабус навчальної дисципліни «Смарт-спеціалізація: поширення досвіду європейських регіонів та громад»*. Дніпро: НТУ «Дніпровська політехніка». https://palsg.nmu.org.ua/ua/Magistr/Prog/Select/2025/Силабус_D4_mag_2025_EU-SMART.pdf.
- Міністерство економіки України. (2024). Про затвердження Методичних рекомендацій щодо застосування смартспеціалізації на регіональному рівні (Наказ № 14563 від 10 червня 2024 р.). <https://me.gov.ua/view/292a29d8-4871-4798-80cc-4917c1539ec3>.
- Міністерство регіонального розвитку, будівництва та житлово-комунального господарства України. (2016). Про затвердження Методики розроблення, проведення моніторингу та оцінки результативності реалізації регіональних стратегій розвитку та планів заходів з їх реалізації (Наказ № 79 від 31 березня 2016 р.). <https://zakon.rada.gov.ua/laws/show/z0632-16/ed20190212#n188>.
- Панкова, Л., Хорошун, Ю., & Сиволап, Ю. (2025). Смарт-спеціалізація регіонів України в умовах інформаційної економіки: відбудова господарських комплексів та об'єктів критичної інфраструктури. *Економічний простір*, (208), 319-327. <https://doi.org/10.30838/EP.208.319-327>.
- Пуліна, Т. В., Бут, Т. В., Пешиков, С. А. (2023). Смарт-спеціалізація як інструмент повоєнного відновлення Запорізького регіону. *Управління змінами та інновації*, (8), 43-48 <https://doi.org/10.32782/СМІ/2023-8-7>.
- Сорока, М. А. (2019). Смарт-спеціалізація у стратегічному плануванні на регіональному та місцевому рівнях: витоки підходу та перспективи для України. *Аспекти публічного управління*, 7(8), 20-29. <https://doi.org/10.15421/151938>.



- Сторонянська, І. З. (Ред.) (2022). *Смарт-спеціалізація регіонів України: методологія та прагматика реалізації: монографія*. (Серія «Проблеми регіонального розвитку»). Львів: ДУ «Ін-т регіональних досліджень ім. М. І. Долишнього НАН України».
- Титаренко, Г. (2024). Теоретичне підґрунтя дослідження процесів розвитку стратегічного планування в Україні на основі європейської смарт-спеціалізації. *Дніпровський науковий часопис публічного управління, психології, права*, (3), 125-131. <https://doi.org/10.51547/ppp.dp.ua/2024.3.19>.
- Чикаренко, І. А., & Маматова, Т. В. (2022). Смарт-спеціалізація в рамках реформованої Політики згуртованості Європейської Комісії: нові пріоритети та виклики. *Дніпровський науковий часопис публічного управління, психології, права*, (6), 91-99. <https://doi.org/10.51547/ppp.dp.ua/2022.6.14>.
- Шацька, З. Я., Когут А. Л. (2023). Інноваційне відновлення промислового комплексу України на засадах стратегії смарт-спеціалізації. *Формування ринкових відносин в Україні*, (6), 12-17 <https://doi.org/10.5281/zenodo.8245904>.
- Directorate-General for Regional and Urban Policy. (2025). *Assessment of smart specialisation as a strategic framework for enhancing research and innovation capacities and for driving innovative and smart economic transformation in EU regions*. Contract No 2024CE16BAT008. Final Report. European Commission; Prognos AG and CSIL. <https://doi.org/10.2776/0300941>.
- Directorate-General for Regional and Urban Policy. (2026). *Smart specialisation Community of Practice Annual Conference 2026*. https://ec.europa.eu/regional_policy/policy/communities-and-networks/s3-community-of-practice/s3_conference_2026_en.
- Erasmus+. (n.d.). *EU-SMART - Smart Specialisation: Spreading Experience of European Regions and Communities*. <https://erasmus-plus.ec.europa.eu/projects/search/details/101127333>.
- European Commission, Joint Research Centre, Woolford, J., Bachtröglger-Unger, J., Burton, A., Lalanne, M. & Gulda, K. (2024). *Skills for Smart Specialisation*. JRC137083. Luxembourg: Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/768385>.
- European Court of Auditors. (2025). *Smart specialisation strategies in the UE. Review 05/2025*. Luxembourg: Publications Office of the European Union. https://www.eca.europa.eu/ECAPublications/RV-2025-05/RV-2025-05_EN.pdf.
- Foray, D., David, P. A., & Hall, B. (2009). Smart Specialisation: The Concept, in *Knowledge for Growth: Prospects for science, technology and innovation* (pp. 20-24). Report EUR 24047, European Union. https://ec.europa.eu/invest-in-research/pdf/download_en/selected_papers_en.pdf.
- Foray, D. (2015). *Smart Specialisation: Opportunities and Challenges for Regional Innovation Policy*. London: Routledge.
- Gianelle, C., Guzzo, F., & Mieszkowski, K. (2019). Smart Specialisation: what gets lost in translation from concept to practice? *Regional Studies*, 54(10), 1377-1388. <https://doi.org/10.1080/00343404.2019.1607970>.
- Gianelle, C., Kyriakou, D., Cohen, C., & Przeor, M. (eds). (2016). *Implementing Smart Specialisation: A Handbook*. Brussels: European Commission. <https://doi.org/10.2791/53569>.
- Hegyi, F., & Rakhmatullin, R. (2017). *Implementing smart specialisation – thematic platform on industrial modernisation*. Luxembourg: Publications Office of the European Union. <https://doi.org/10.2760/388077>.
- Kruse, M., Somcutean, C., & Wedemeier, J. (2023). Productivity, Smart Specialisation, and Innovation: Empirical findings on EU macro-regions. *Region: the journal of ERSA*, 10(1), 1-18. <https://doi.org/10.18335/region.v10i1.419>.
- Kyriakou, D., Palazuelos Martínez, M., Periañez-Forte, I., & Rainoldi, A. (eds.). (2019). *Governing Smart Specialisation* (1st ed.). London: Routledge.
- Larrea, M., Estensoro, M., & Pertoldi, M. (2019). *Multilevel governance for smart specialisation: basic pillars for its construction*. Luxembourg: Publications Office of the European Union. <https://doi.org/10.2760/425579>.
- Lien, S. (2026). Models that flow – Smart specialization and its travel across Europe. *Regional Science Policy & Practice*, 18(5), 100298. <https://doi.org/10.1016/j.rsp.2026.100298>.
- Marinelli, E., & Perianez Forte, I. (2017). *Smart specialisation at work: the entrepreneurial discovery as a continuous process*. Luxembourg: Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/514714>.
- McCann, P., van Oort, F., & Goddard, J. (eds.) (2019). *The Empirical and Institutional Dimensions of Smart Specialisation*. London: Routledge.
- Pérez, S. E., & Marinell E. (2023). *Innovation Diffusion Concept note for the S3CoP Working Group*. European Commission. https://ec.europa.eu/regional_policy/sources/policy/communities-and-networks/s3-community-of-practice/WG_Innovation_diffusion.pdf.
- Pinto, H., Laranja, M., & Uyarra, E. (2024). Smart specialization, public authorities, and innovation intermediaries in developing regions. *Regional Sustainability*, 5(4), 100175. <https://doi.org/10.1016/j.regus.2024.100175>.
- Reid, A., Steward, F., & Miedzinski, M. (2023). *Aligning smart specialisation with transformative innovation policy. Lessons for implementing challenge-led missions in smart specialisation*. JRC134466. Luxembourg: Publications Office of the European Union. <https://doi.org/10.2760/359295>.
- Reimeris, R., & Laranja, M. (2024). *Discovery-oriented innovation and industrial policies : insights from five regions about open discovery processes*, Luxembourg: Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/167979>.
- Rodríguez Ochoa, D., Arran, N., & Fernandez de Arroyabe, M. (2025). Strengthening Smart Specialisation Strategies (S3) Through Network Analysis: Policy Insights from a Decade of Innovation Projects in Aragón. *Economies*, 13(8), 218. <https://doi.org/10.3390/economies13080218>.



Vagias, W. M. (2006). *Likert-type scale response anchors*. Clemson International Institute for Tourism & Research Development, Department of Parks, Recreation and Tourism Management. Clemson University. <https://www.marquette.edu/student-affairs/assessment-likert-scales.php>.

REFERENCES

- Borodin, Y., & Mamatova, T. (2023). Education and Skills for S3 Development within the Smart Specialization Framework for EU Enlargement and Neighborhood Region. *Public Administration Aspects*, 11(1), 72-78. <https://doi.org/10.15421/152310>
- Cabinet of Ministers of Ukraine. (2015). On the approval of the Procedure for the development of regional development strategies and action plans for their implementation, as well as for the monitoring and evaluation of the effectiveness of the implementation of the said regional strategies and action plans (Resolution No. 932, November 11, 2015). Verkhovna Rada of Ukraine. <https://zakon.rada.gov.ua/laws/show/932-2015-п/ed20181117#n63>
- Chikarenko, I., & Mamatova, T. (2022). Smart specialisation in the framework of the reformed Cohesion Policy of the European Commission: new priorities and challenges. *Dnipro Scientific Journal of Public Administration, Psychology, Law*, (6), 91-99. <https://doi.org/10.51547/ppp.dp.ua/2022.6.14>
- Directorate-General for Regional and Urban Policy. (2025). *Assessment of smart specialisation as a strategic framework for enhancing research and innovation capacities and for driving innovative and smart economic transformation in EU regions*. Contract No 2024CE16BAT008. Final Report. European Commission; Prognos AG and CSIL. <https://doi.org/10.2776/0300941>.
- Directorate-General for Regional and Urban Policy. (2026). *Smart specialisation Community of Practice Annual Conference 2026*. https://ec.europa.eu/regional_policy/policy/communities-and-networks/s3-community-of-practice/s3_conference_2026_en.
- Erasmus+. (n.d.). *EU-SMART - Smart Specialisation: Spreading Experience of European Regions and Communities*. <https://erasmus-plus.ec.europa.eu/projects/search/details/101127333>.
- European Commission, Joint Research Centre, Woolford, J., Bachtrögler-Unger, J., Burton, A., Lalanne, M. & Gulda, K. (2024). *Skills for Smart Specialisation*. JRC137083. Luxembourg: Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/768385>.
- European Court of Auditors. (2025). *Smart specialisation strategies in the UE. Review 05/2025*. Luxembourg: Publications Office of the European Union. https://www.eca.europa.eu/ECAPublications/RV-2025-05/RV-2025-05_EN.pdf.
- Foray, D., David, P. A., & Hall, B. (2009). Smart Specialisation: The Concept, in *Knowledge for Growth: Prospects for science, technology and innovation* (pp. 20-24). Report EUR 24047, European Union. https://ec.europa.eu/invest-in-research/pdf/download_en/selected_papers_en.pdf.
- Foray, D. (2015). *Smart Specialisation: Opportunities and Challenges for Regional Innovation Policy*. London: Routledge.
- Gianelle, C., Guzzo, F., & Mieszkowski, K. (2019). Smart Specialisation: what gets lost in translation from concept to practice? *Regional Studies*, 54(10), 1377-1388. <https://doi.org/10.1080/00343404.2019.1607970>.
- Gianelle, C., Kyriakou, D., Cohen, C., & Przeor, M. (eds). (2016). *Implementing Smart Specialisation: A Handbook*. Brussels: European Commission. <https://doi.org/10.2791/53569>.
- Hegyi, F., & Rakhmatullin, R. (2017). *Implementing smart specialisation – thematic platform on industrial modernisation*. Luxembourg: Publications Office of the European Union. <https://doi.org/10.2760/388077>.
- Korchynska, O. O. (2026). Transformation of the smart specialization concept in the context of post-war reconstruction of Ukraine. *Scientific Notes of Taurida National V. I. Vernadsky University. Series: Public Management and Administration*, 37(1), 64-68. <https://doi.org/10.32782/TNU-2663-6468/2026.1/09>
- Kruse, M., Somcutean, C., & Wedemeier, J. (2023). Productivity, Smart Specialisation, and Innovation: Empirical findings on EU macro-regions. *Region: the journal of ERSA*, 10(1), 1-18. <https://doi.org/10.18335/region.v10i1.419>.
- Kyriakou, D., Palazuelos Martínez, M., Periañez-Forte, I., & Rainoldi, A. (eds.). (2019). *Governing Smart Specialisation* (1st ed.). London : Routledge.
- Larrea, M., Estensoro, M., & Pertoldi, M. (2019). *Multilevel governance for smart specialisation: basic pillars for its construction*. Luxembourg: Publications Office of the European Union. <https://doi.org/10.2760/425579>.
- Lien, S. (2026). Models that flow – Smart specialization and its travel across Europe. *Regional Science Policy & Practice*, 18(5), 100298, <https://doi.org/10.1016/j.rsp.2026.100298>.
- Lyashenko, V. I. (Ed.). (2025). *Adapting Smart Specialisation Strategies in the Regions of Ukraine: a collective monograph*. National Academy of Sciences of Ukraine, Institute of Industrial Economics. Kyiv. <https://doi.org/10.37405/ASSSRU.2025>
- Mamatova, T. V., Chikarenko, I. A., & Borodin, Y. I. (2025b). *Syllabus for the academic discipline “Smart Specialisation: Spreading the Experience of European Regions and Communities”*. Dnipro: Dnipro University of Technology. https://palsg.nmu.org.ua/ua/Magistr/Prog/Select/2025/Силабус_D4_маг_2025_EU-SMART.pdf
- Mamatova, T., Chikarenko, I., & Borodin, Ye. (2025b). The entrepreneurial discovery process: methodology and best European practices. *Dnipro Scientific Journal of Public Administration, Psychology, Law*, (2), 17-22. <https://doi.org/10.51547/ppp.dp.ua/2025.2.3>
- Marinelli, E., & Perianez Forte, I. (2017). *Smart specialisation at work: the entrepreneurial discovery as a continuous*



- process. Luxembourg: Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/514714>.
- McCann, P., van Oort, F., & Goddard, J. (eds.) (2019). *The Empirical and Institutional Dimensions of Smart Specialisation*. London: Routledge.
- Ministry of Economy of Ukraine. (2024). *On approval of Methodological recommendations on the application of smart specialization at the regional level* (Order № 14563 of June 10, 2024). Ministry of Economy of Ukraine <https://me.gov.ua/view/292a29d8-4871-4798-80cc-4917c1539ec3>
- Ministry of Regional Development, Construction and Housing and Communal Services of Ukraine (2016). *On the Approval of the Methodology for the Development, Monitoring and Evaluation of the Effectiveness of the Implementation of Regional Development Strategies and Action Plans for their Implementation* (Order No. 79 of March 31, 2016). Verkhovna Rada of Ukraine. <https://zakon.rada.gov.ua/laws/show/z0632-16/ed20190212#n188>
- Pankova, L., Khoroshun, Y., & Syvolap, Y. (2025). Smart specialization of Ukrainian regions in the information economy: rebuilding economic complexes and critical infrastructure. *Economic space*, (208), 319-327. <https://doi.org/10.30838/EP.208.319-327>
- Pérez, S. E., & Marinell E. (2023). *Innovation Diffusion Concept note for the S3CoP Working Group*. European Commission. https://ec.europa.eu/regional_policy/sources/policy/communities-and-networks/s3-community-of-practice/WG_Innovation_diffusion.pdf.
- Pinto, H., Laranja, M., & Uyarra, E. (2024). Smart specialization, public authorities, and innovation intermediaries in developing regions. *Regional Sustainability*, 5(4), 100175. <https://doi.org/10.1016/j.regsus.2024.100175>.
- Pulina, T., But, T., & Peshykov, S. (2023). Smart-specialization as a tool post-war reconstruction of the Zaporizhzhia region. *Change Management and Innovation*, (8), 43-48. <https://doi.org/10.32782/CMI/2023-8-7>
- Reid, A., Steward, F., & Miedzinski, M. (2023). *Aligning smart specialisation with transformative innovation policy. Lessons for implementing challenge-led missions in smart specialisation*. JRC134466. Luxembourg: Publications Office of the European Union. <https://doi.org/10.2760/359295>.
- Reimeris, R., & Laranja, M. (2024). *Discovery-oriented innovation and industrial policies: insights from five regions about open discovery processes*, Luxembourg: Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/167979>.
- Rodríguez Ochoa, D., Arran, N., & Fernandez de Arroyabe, M. (2025). Strengthening Smart Specialisation Strategies (S3) Through Network Analysis: Policy Insights from a Decade of Innovation Projects in Aragón. *Economies*, 13(8), 218. <https://doi.org/10.3390/economies13080218>.
- Shatska, Z. Ya., & Kogut, A. L. (2023). Innovative renewal of the industrial complex of Ukraine on the basis of the smart specialization strategy. *Market Relations Development in Ukraine*, (6), 12-17. <https://doi.org/10.5281/zenodo.8245904>
- Soroka, M. A. (2019). Smart specialization in strategic planning at the regional and local levels: origins of the approach and prospects for Ukraine. *Public administration aspects*, 7(8), 20-29. <https://doi.org/10.15421/151938>
- Storonyanska, I. Z. (Ed.). (2022). *Smart specialization of the regions of Ukraine: methodology and pragmatics of implementation*. Lviv: DU «Instytut rehionalnykh doslidzhen im. M. I. Dolishnoho NAN Ukrainy»
- Tytarenko, H. (2024). Theoretical grounds for studying the processes of strategic planning process development in Ukraine based on the European smart specialisation. *Dnipro Scientific Journal of Public Administration, Psychology, Law*, (3), 125-131. <https://doi.org/10.51547/ppp.dp.ua/2024.3.19>
- Vagias, W. M. (2006). *Likert-type scale response anchors*. Clemson International Institute for Tourism & Research Development, Department of Parks, Recreation and Tourism Management. Clemson University. <https://www.marquette.edu/student-affairs/assessment-likert-scales.php>.
- Vozniak, H. V. (2021). Theoretical and methodological aspects of the formation of a model of smart specialization of the regions of Ukraine. *Regional economy*, (2), 27-36. <https://doi.org/10.36818/1562-0905-2021-2-3>
- Yegorov, I. Yu. (Ed.). (2020). *The Formation of 'Smart Specialisation' in the Ukrainian Economy: a collective monograph*. Kyiv: National Academy of Sciences of Ukraine, State Institution "Institute of Economics and Forecasting of the National Academy of Sciences of Ukraine". <https://ief.org.ua/publication/monohrafii/2020/formuvannja-quotrozumnoi-specializaciiquot-v-ekonomici-ukrainy>
- Yegorov, I. Yu. (Ed.). (2021). *Innovative Activity and the Development of Smart Specialisation in the Ukrainian Economy: a collective monograph*. Kharkiv: National Academy of Sciences of Ukraine, State Institution "Institute of Economics and Forecasting of the National Academy of Sciences of Ukraine"., https://www.researchgate.net/publication/366986981_Innovacijna_dialnist_i_formuvanna_smart-specializacii_v_Ukraini
- Yemelyanov, V., & Kozlova, L. (2019). Peculiarities of implementation of the smart specialization Concept in Ukraine. *Public Administration and Regional Development*, (6), 777-801. <https://doi.org/10.34132/pard2019.06.04>