СТОПАНСКА АКАДЕМИЯ

„Димитър А. Ценов" - Свищов

KreativEU
Knowledge & Creativity European University

Международна научно-практическа конференция

90 години дарителство, знание, иновации и устойчиво развитие в СА „Д. А. Ценов" – Свищов

Том II



5-7 ноември 2026 г.

СТОПАНСКА АКАДЕМИЯ „Д. А. ЦЕНОВ“ – СВИЩОВ

МЕЖДУНАРОДНА НАУЧНО-ПРАКТИЧЕСКА КОНФЕРЕНЦИЯ

90 ГОДИНИ ДАРИТЕЛСТВО, ЗНАНИЕ, ИНОВАЦИИ И УСТОЙЧИВО РАЗВИТИЕ В СА „Д. А. ЦЕНОВ“ – СВИЩОВ

Свищов, 5-7 ноември 2026 г.

Посветена на 90 години от създаването на Стопанска академия „Димитър А. Ценов“

Сборник с доклади

ТОМ II

Международната научно-практическа конференция е организирана при изпълнение на Административен договор № КП-06-МНФ/23 от 18.08.2026 г. (BNSF-1.010-0023-C01) на Фонд „Научни изследвания“ при МОН по Процедура за подкрепа на международни научни форуми, провеждани в Република България

Академично издателство „Ценов“
Свищов
2026

ПРОГРАМЕН КОМИТЕТ
Доц. д-р Марин Маринов
Ректор на Стопанска академия „Димитър А. Ценов“ – председател
Проф. д-р Красимир Шишманов
Проф. д. н. Божидар Божинов
Проф. д-р Любчо Варамезов
Доц. д-р Маргарита Шопова
Доц. д-р Ваня Григорова
Доц. д-р Румен Ерусалимов
Доц. д-р Пламен Йорданов
Доц. д-р Драгомир Илиев
Доц. д-р Иван Марчевски
Доц. д-р Ирена Емилова
Доц. д-р Сергей Найденов
Доц. д-р Катя Личева
Проф. д-р Пенка Шишманова
Доц. д-р Елена Йорданова
Доц. д-р Пламен Петков
Доц. д-р Пепа Стойкова
Доц. д-р Михаил Чиприянов
Доц. д-р Любка Илиева
Доц. д-р Теодора Филипова
Ст. преп. Елка Узунова
Ст. преп. д-р Радослав Николов

ОРГАНИЗАЦИОНЕН КОМИТЕТ
Доц. д-р Здравко Любенов – *председател*
Проф. д-р Светослав Илийчовски
Проф. д-р Атанас Атанасов
Доц. д-р Галина Чиприянова
Доц. д-р Маруся Смокова-Стефанова
Доц. д-р Красимира Славева
Гл. ас. д-р Асен Божиков
Ст. преп. д-р Венцислав Диков

РЕДАКЦИОНЕН СЪВЕТ
Проф. д-р Атанас Атанасов – *председател*
Проф. д-р Светослав Илийчовски
Проф. д-р Красимир Шишманов
Доц. д-р Искра Пантелеева
Доц. д-р Танер Исмаилов
Доц. д-р Здравко Любенов
Доц. д-р Галя Иванова-Кузманова
Доц. д-р Ирена Емилова
Доц. д-р Христо Сирашки
Доц. д-р Елена Йорданова
Доц. д-р Любка Илиева
Доц. д-р Валентин Милинов
Доц. д-р Красимира Славева
Доц. д-р Маруся Смокова-Стефанова
Доц. д-р Венцислав Василев
Доц. д-р Зорница Петкова

Публикуваните материали са рецензирани по метода на двойно сляпо рецензиране. Авторите носят отговорност за съдържанието на материалите, изразените мнения, използваните данни, цитираните източници и езиковото оформление на текстовете. Фонд „Научни изследвания“ не носи отговорност за съдържанието на докладите, представени на научния форум, както и за съдържанието на рекламните и други материали за него.

ISBN 978-954-23-2688-5 (print)
ISBN 978-954-23-2689-2 (online)

D. A. TSENOV ACADEMY OF ECONOMICS – SVISHTOV

INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE

90 YEARS OF CHARITY, KNOWLEDGE, INNOVATION AND SUSTAINABLE DEVELOPMENT IN D. A. TSENOV ACADEMY OF ECONOMICS - SVISHTOV

Svishtov, 5th - 7th November 2026

Dedicated to the 90th anniversary since the establishment of D. A. Tsenov Academy of Economics

Conference Proceedings

VOLUME II

The International Scientific and Practical Conference was organized in the implementation of Administrative Contract № КП-06-МНФ/23 of August 18, 2026 (BNSF-1.010-0023-C01), awarded by the Bulgarian National Science Fund at the Ministry of Education and Science under the Procedure for Support of International Scientific Forums Held in the Republic of Bulgaria

Tsenov Academic Publishing House
Svishtov
2026

PROGRAM COMMITTEE
Assoc. Prof. Marin Marinov, PhD
Rector of D. A. Tsenov Academy of Economics
Prof. Krasimir Shishmanov, PhD
Prof. Bozhidar Bozhinov, PhD
Prof. Lyubcho Varamezov, PhD
Assoc. Prof. Margarita Shopova, PhD
Assoc. Prof. Vanya Grigorova, PhD
Assoc. Prof. Rumen Jerusalemov, PhD
Assoc. Prof. Plamen Yordanov, PhD
Assoc. Prof. Dragomir Iliev, PhD
Assoc. Prof. Ivan Marchevski, PhD
Assoc. Prof. Irena Emilova, PhD
Assoc. Prof. Sergey Naydenov, PhD
Assoc. Prof. Katya Licheva, PhD
Prof. Penka Shishmanova, PhD
Assoc. Prof. Elena Yordanova, PhD
Assoc. Prof. Plamen Petkov, PhD
Assoc. Prof. Pepa Stoykova, PhD
Assoc. Prof. Mihail Chipriyanov, PhD
Assoc. Prof. Lyubka Ilieva, PhD
Assoc. Prof. Teodora Filipova, PhD
Senior Lecturer Elka Uzunova
Senior Lecturer Radoslav Nikolov, PhD

ORGANIZING COMMITTEE
Assoc. Prof. Zdravko Lyubenov. PhD, Chairman
Prof. Svetoslav Iliychovski, PhD
Prof. Atanas Atanasov, PhD
Assoc. Prof. Galina Chipriyanova, PhD
Assoc. Prof. Marusya Smokova-Stefanova, PhD
Assoc. Prof. Krasimira Slaveva, PhD
Ch. Assist. Prof. Asen Bozhikov, PhD
Sen. Lect. Ventsislav Dikov

EDITORIAL BOARD
Prof. Atanas Atanasov, PhD – Chair
Prof. Svetoslav Iliychovski, PhD
Assoc. Prof. Iskra Panteleeva, PhD
Prof. Krasimir Shishmanov, PhD
Assoc. Prof. Taner Ismailov, PhD
Assoc. Prof. Zdravko Lyubenov, PhD
Assoc. Prof. Galya Ivanova-Kuzmanova, PhD
Assoc. Prof. Irena Emilova, PhD
Assoc. Prof. Hristo Sirashki, PhD
Assoc. Prof. Elena Yordanova, PhD
Assoc. Prof. Lyubka Ilieva, PhD
Assoc. Prof. Valentin Milinov, PhD
Assoc. Prof. Krasimira Slaveva, PhD
Assoc. Prof. Marusya Smokova-Stefanova, PhD
Assoc. Prof. Ventsislav Vasilev, PhD
Assoc. Prof. Zornitsa Petkova, PhD

The published materials have been peer-reviewed using the double-blind review method. The authors are solely responsible for the content of the materials, the opinions expressed, the data used, the cited sources, and the linguistic formatting of the texts. The Bulgarian National Science Fund bears no responsibility for the content of the papers presented at the scientific forum, nor for the content of its promotional or other materials.

ISBN 978-954-23-2688-5 (print)
ISBN 978-954-23-2689-2 (online)

СЪДЪРЖАНИЕ

ТОМ II
МЕНИДЖМЪНТ, МАРКЕТИНГ, ПЛАНИРАНЕ, МЕЖДУНАРОДНА ИКОНОМИКА, БИЗНЕС ИНФОРМАТИКА

ИЗСЛЕДВАНЕ НА ГОТОВНОСТТА, НАГЛАСИТЕ И ПОТРЕБНОСТИТЕ НА ПРЕПОДАВАТЕЛИТЕ ОТ СТОПАНСКА АКАДЕМИЯ „Д. А. ЦЕНОВ“ ЗА ИЗПОЛЗВАНЕ НА ИЗКУСТВЕН ИНТЕЛЕКТ
Проф. д.н. Борислав Борисов, гл. ас. д-р Юлиян Господинов..... 9

THE PLACE AND ROLE OF UKRAINE IN ENSURING THE EU'S EXTERNAL ECONOMIC SECURITY
Prof. D.Sc. (Economics) Illya Khadzhynov..... 18

SHADOW DIGITAL ECONOMY AND SUSTAINABLE DEVELOPMENT
Prof. DSC Serghei Ohrimenco, Prof. DSC Dinara Orlova, Prof. PhD Tatiana Manasterska, Valeriu Cernei, Partner, IT Audit&Advisory..... 24

УПРАВЛЕНИЕТО НА ЗНАНИЕТО КАТО МЕХАНИЗЪМ ЗА ФОРМИРАНЕ НА ИНОВАЦИОННА СПОСОБНОСТ И ИНОВАЦИОННО ПРЕДСТАВЯНЕ НА ПРЕДПРИЯТИЕТО (ТЕОРЕТИЧЕН ПРЕГЛЕД И КОНЦЕПТУАЛНА РАМКА)
Проф. д-р Любчо Варамезов, докторант Стела Маринова..... 32

СТРАТЕГИЧЕСКАТА ДЪЛБОЧИНА (ВЪЗХОДЪТ) И НЕСТРАТЕГИЧЕСКАТА ПЛИТКОСТ (УПАДЪКЪТ) – КАЗУСЪТ НА СВИЩОВСКАТА АКАДЕМИЯ
Проф. д-р Никола Янков..... 40

LEAN MARKETING – СЪВРЕМЕНЕН ПОДХОД ЗА ТРАНСФОРМАЦИЯ НА МАРКЕТИНГОВАТА СТРАТЕГИЯ
Доц. д-р Ваня Григорова..... 48

ПОЗИЦИОНИРАНЕ НА ТЪРГОВСКА МАРКА В ДИГИТАЛНА СРЕДА
Доц. д-р Ваня Григорова, Александра Иванова, студент..... 56

СЪВРЕМЕННИ ПОДХОДИ ЗА ПРОДУКТОВА ИНОВАЦИЯ В КОЗМЕТИЧНИЯ СЕКТОР
Доц. д-р Ваня Григорова, Марая Драганова, студент..... 64

ДЕТЕРМИНАНТИ НА ТЪРСЕНЕТО НА ЗАСТРАХОВКИ СРЕЩУ ТЪРГОВСКИ РИСК
Доц. д-р Ваня Григорова, докторант Николай Марков,..... 71

ВЛИЯНИЕ НА ДИГИТАЛНИЯ БЪРНАУТ ВЪРХУ ПОТРЕБИТЕЛСКОТО ПОВЕДЕНИЕ
Доц. д-р Ваня Григорова, Пламена Жекова, студент..... 79

INTERNATIONAL ECONOMIC INTEGRATION AND STRUCTURAL RESILIENCE
Assoc. Prof., PhD Giga Abuseridze, Assoc. Prof. PhD Anatoliy Asenov..... 87

ПАРТИСИПАТИВНО ВЗАИМОДЕЙСТВИЕ В ИНОВАЦИОННИТЕ МРЕЖИ
Доц. д-р Евелина Парашкевова, проф. д-р Маргарита Богданова, доц. д-р Александра Пенишевич, проф. д-р Бранислав Санчанин" 93

ОСОБЕНОСТИ НА СЪВРЕМЕННИЯ МЕЖДУНАРОДЕН БИЗНЕС
Доц. д-р Здравко Любенов 101

CONVERGENCE OR DIVERGENCE? DIGITAL TRANSFORMATION AND EMERGING INTERNATIONAL MARKETING TRENDS IN ROMANIA AND BULGARIA
Assoc. Prof. Cătălin Deatcu-Gavril PhD, assoc. Prof. Alexander Ganchev PhD, Ivaylo Marinov PhD, Vlad-Mihai Panait PhD, Ec. Elena Deatcu-Gavril 108

CYBERSECURITY AND OPERATIONAL RISK IN THE ERA OF DIGITAL TRANSFORMATION: CHALLENGES FOR SUSTAINABLE DEVELOPMENT
Assoc. Prof. Habilitated Doctor Dorogaia Irina, Caminschi Olga, PhD student, Assistant Lecturer 122

MANAGING ORGANIZATIONAL STRUCTURE CHANGES IN AN UNSTABLE ENVIRONMENT
Assoc. Prof. Habilitated Doctor Dorogaia Irina, Coval Anastasia, Assistant Lecturer 129

ДИГИТАЛНОТО РАВЕНСТВО КАТО ФАКТОР В ПРОЦЕСА НА ДИГИТАЛНА ТРАНСФОРМАЦИЯ
Доц. д-р Кремена Маринова-Костова 139

ИНОВАЦИОННИ МРЕЖИ И МЕЖДУФИРМЕНО СЪТРУДНИЧЕСТВО: ФАКТОРИ, ВЗАИМОДЕЙСТВИЯ И РАЗВИТИЕ
Доц. д-р Любомир Тодоров, проф. д-р Дариуш Новак 146

СОЦИАЛНОМРЕЖОВИ ПОДХОД ЗА ИЗСЛЕДВАНЕ НА МЕЖДУУНИВЕРСИТЕТСКОТО СЪТРУДНИЧЕСТВО В РАМКИТЕ НА ИНИЦИАТИВАТА „ЕВРОПЕЙСКИ УНИВЕРСИТЕТ“: СРАВНИТЕЛЕН АНАЛИЗ ПО ПОКАНИ ЗА КАНДИДАТСТВАНЕ
Доц. д-р Маруся Смокова, гл. ас. д-р Галин Стефанов 155

ЕФЕКТИВНИ КОМУНИКАЦИОННИ СТРАТЕГИИ КАТО ФАКТОР ЗА ОРГАНИЗАЦИОННА УСТОЙЧИВОСТ
Доц. д-р Милен Динков 166

ESG ПОЛИТИКИ И РЕШЕНИЯ В СТРОИТЕЛНИЯ СЕКТОР
Доц. д-р Михаил Чиприянов 172

ВЪЗДЕЙСТВИЕ НА АГЕНТИТЕ С ИЗКУСТВЕН ИНТЕЛЕКТ ВЪРХУ СВЕТОВНАТА МРЕЖА
Доц. д-р Наталия Маринова 176

ASSESSING FACTORS AFFECTING AN ORGANIZATION’S INFORMATION SECURITY
Assoc. Prof. Olga Pugacheva, PhD 184

СТРАТЕГИЧЕСКИ АНАЛИЗ НА ПАЗАРА НА ЧУЖДОЕЗИКОВИ ОБРАЗОВАТЕЛНИ УСЛУГИ
Доц. д-р Пенка Горанова..... 192

ПРЕДИЗВИКАТЕЛСТВА И РИСКОВЕ ПРИ ВНЕДРЯВАНЕТО НА ИЗКУСТВЕН ИНТЕЛЕКТ И АНАЛИЗ НА ГОЛЕМИ ДАННИ ЗА УСТОЙЧИВИ ВЕРИГИ ЗА ДОСТАВКИ
Доц. д-р Петя Емилова, доц. д-р Веселин Попов 198

MANAGING RESEARCH–EDUCATION SYNERGIES FOR ENGINEERING AND SCIENCE CAREER DEVELOPMENT IN THE UNIVERSITY ENVIRONMENT: THE CASE OF VALAHIA UNIVERSITY OF TÂRGOVIȘTE
Assoc. Prof. Dr. Eng., Sălișteanu I.C., Professor, Dr. Eng., Dunea D.E.C. , Professor, Dr. Eng., Coandă H.G. , Assoc. Prof., Dr. Eng., Udroiu I.N. , Professor, Dr. Croitoru G., Senior Research Scientist, Dr. Eng., Nicolescu C.M., Assoc. Prof., Dr. Bumbac M., Assoc. Prof., Dr. Eng., Alexandrescu D.C., University Lecturer Dr., Hossu A.M., Assoc. Prof., Dr. Eng., Angelescu N., Assoc. Prof., Dr. Eng., Popa I.F., University Lecturer Dr., Catangiu A. 207

УПРАВЛЕНКСИ ИЗМЕРЕНИЯ НА КОНТИНУУМА „ПРОДУКТ – УСЛУГА“: ОПЕРАЦИОННА СИСТЕМА И ТРАНСФОРМАЦИОННИ ПРОЦЕСИ
Доц. д-р Силвия Благоева, доц. д-р Ирена Емилова 217

АСПЕКТИ НА УПРАВЛЕНИЕТО НА КАЧЕСТВОТО В ОРГАНИЗАЦИИТЕ ОТ ПУБЛИЧНИЯ СЕКТОР
Доц. д-р Христо Сирашки..... 224

НАУЧНАТА ПОЛИТИКА НА СТРАНИТЕ ОТ ЕВРОПЕЙСКИЯ СЪЮЗ И ВЛИЯНИЕТО НА ГЛОБАЛИЗАЦИЯТА
доц. д-р Цветан Дилков..... 230

ВЗЕМАНЕ НА РЕШЕНИЯ ЗА ПОКУПКА В СРЕДА НА ИЗКУСТВЕН ИНТЕЛЕКТ
Гл. ас. д-р Атанаска Решеткова..... 238

ОСОБЕНОСТИ В АНТИКРИЗИСНОТО УПРАВЛЕНИЕ
Гл. ас. д-р Валентин Панайотов 246

КОНВЕРГЕНЦИЯ НА ДОХОДИТЕ В РАМКИТЕ НА ЕВРОПЕЙСКИЯ СЪЮЗ: ДЕКОМПОЗИРАНЕ НА НАЦИОНАЛНО И РЕГИОНАЛНО НИВО
Гл. ас. д-р Галин Стефанов..... 253

АДМИНИСТРАТИВНИ РЕШЕНИЯ ЗА УСТОЙЧИВИ СОЦИАЛНИ ИНВЕСТИЦИ
Гл. ас. д-р Десислава Алексиева..... 262

ВАЛУТНА ЕКСПОЗИЦИЯ И ПОДХОДИ ЗА УПРАВЛЕНИЕ НА РИСКА: ИЗСЛЕДВАНЕ НА НАУЧНАТА ЛИТЕРАТУРА
Гл. ас. д-р Димитър Костов 268

СТРАТЕГИЧЕСКИ АСПЕКТИ НА СВИВАЩИТЕ СЕ ГРАДОВЕ
Гл. ас. д-р Елица Лазарова, Chrysostomos Roditis..... 281

ГЕОПОЛИТИЧЕСКИЯТ РИСК КАТО ФАКТОР ПРИ ИЗБОРА НА ЛОКАЦИЯ ЗА ПРЕКИ ЧУЖДЕСТРАННИ ИНВЕСТИЦИИ
Гл. ас. д-р Иван Ангелов 288

ПЕРИФЕРНИ ИЗЧИСЛЕНИЯ И ИНТЕРНЕТ НА НЕЩАТА: БЪДЕЩЕТО НА СВЪРЗАНИТЕ УСТРОЙСТВА
Гл. ас. д-р Искрен Таиров 296

ЕВРИСТИЧНИ СТРАТЕГИИ ЗА РЕДУКЦИЯ НА СЛОЖНОСТТА В ИКОНОМИЧЕСКОТО ПЛАНИРАНЕ ПРИ ОГРАНИЧЕНА ИНФОРМАЦИЯ
Гл. ас. д-р Надежда Веселинова 302

КАЧЕСТВО НА ТРУДОВИЯ ЖИВОТ: ОРГАНИЗАЦИОННО-ПОВЕДЕНЧЕСКИ АСПЕКТИ
Гл. ас. д-р Надежда Стефанова 310

АНАЛИЗ НА ЕФЕКТИВНОСТТА НА ОНЛАЙН МАРКЕТИНГА И KPI ПОКАЗАТЕЛИ
Гл. ас. д-р Пламен Петров 317

ТЕОРИЯ И ПРАКТИКА: ФАКТОРИ ЗА ИЗПОЛЗВАНЕ НА ИЗКУСТВЕН ИНТЕЛЕКТ ОТ СТУДЕНТИ ПО МАРКЕТИНГ
Гл. ас. д-р Светла Атанасова 325

ДОБРИ ПРАКТИКИ ПО ПРЕДОСТАВЯНЕ НА ДОБРО УПРАВЛЕНИЕ ОТ ДЪРЖАВНАТА АДМИНИСТРАЦИЯ
Гл. ас. д-р Юлиян Господинов 334

RETHINKING PLACE BRANDING: STRATEGIC FRAMEWORKS AND EXECUTION TOOLS
Senior Lecturer, PhD, Aliya Turganovna Baigarina, PhD student Anar Aliyeva, Head Assist.Prof., PhD Stanislava Stoyanova-Asenova, Assoc.prof. PhD Anatoliy Asenov ... 345

ЕЗИКОВА БЛИЗОСТ И ИНСТИТУЦИОНАЛНА ИНТЕГРАЦИЯ В МЕЖДУНАРОДНАТА ТЪРГОВИЯ: КОНЦЕПТУАЛЕН ПОДХОД
Ст. преп. д-р Маргарита Михайлова, доц. д-р Драгомир Илиев 350

ОТ КОНЦЕПЦИЯТА ДО ВЪЗДЕЙСТВИЕТО: ДИЗАЙН И ИЗПЪЛНЕНИЕ НА УСПЕШНИ ПРОЕКТИ ПО ПРОГРАМА „ИНТЕРРЕГ РУМЪНИЯ–БЪЛГАРИЯ“
Лектор, д-р Михаела Тинка Удриштиойу; професор, д-р Нику Джордже Биздоака 356

СТРАТЕГИЧЕСКО УПРАВЛЕНИЕ НА ЗАИНТЕРЕСОВАНИТЕ СТРАНИ ПРИ ПЛАНИРАНЕ НА ЕКОЛОГИЧНИ ПРОЕКТИ ЗА УПРАВЛЕНИЕ НА ОТПАДЪЦИ
Ас. д-р Димчо Шопов 362

MANAGERIAL STRATEGIES FOR MOTIVATING THE EMPLOYEES FROM ROMANIAN PUBLIC INSTITUTIONS
Assistant Professor, Ph.D, Miruna Angela Mutu, Senior Lecturer, Ph.D, Andreea Anamaria Panagoret, Senior Lecturer, Ph.D, Dragos Mihai Panagoret, Lecturer, Ph.D, Sorina Cernat 371

MAPPING AND MITIGATING CHILDREN'S DIGITAL FOOTPRINTS IN EGYPT
Assistant Professor Nehal Lotfy H. Khalil, PhD..... 384

ЕКСПЕРТНОТО ИНТЕРВЮ В ИЗСЛЕДВАНИЯТА ПО ДИГИТАЛЕН МАРКЕТИНГ: МЕТОДОЛОГИЧНИ НАСОКИ
Ас. д-р Спасимир Цветанов..... 392

МАРКЕТИНГ, ВОДЕН ОТ НОСТАЛГИЯТА В ЕРАТА НА ИЗКУСТВЕНИЯ ИНТЕЛЕКТ – ВЪЗМОЖНОСТИ, ПРЕДИЗВИКАТЕЛСТВА И ТЕНДЕНЦИИ
Ас. д-р Стелиана Василева 400

AI В ПОМОЩ НА СЕЛЕКЦИОНЕРИТЕ В ЖИВОТНОВЪДСТВОТО: ПРОТОТИП НА ИНТЕЛИГЕНТНА СИСТЕМА ЗА АНАЛИЗ НА РОДОСЛОВИЯ И ПОДПОМАГАНЕ НА РАЗВЪДНАТА ДЕЙНОСТ
Д-р инж. Пенка Чернаева, д-р инж. Петър Чернаев..... 411

АНАЛИЗ НА ПОТЕНЦИАЛА НА ИНОВАЦИОННИТЕ ПРОЕКТИ ЗА НАМАЛЯВАНЕ НА БЕДНОСТТА В СЕВЕРОЗАПАДНИЯ РАЙОН ЗА ПЛАНИРАНЕ БЪЛГАРИЯ
Д-р Таня Минкова Николова..... 418

УЧАСТИЕТО В ИНИЦИАТИВАТА ЗА НАСОЧЕНА ТЪРГОВИЯ И ВИЗОВАТА ОТВОРЕНОСТ В АФРИКА
Докторант Анита Йорданова 424

СТРАТЕГИЧЕСКО ПЛАНИРАНЕ НА РАБОТНАТА СИЛА В ЗДРАВНАТА СИСТЕМА НА ГЪРЦИЯ В КОНТЕКСТА НА ПРОФЕСИОНАЛНИТЕ ДИСБАЛАНСИ И РЕГИОНАЛНИТЕ НЕРАВЕНСТВА
Докторант Анна Коллару 432

СТРАТЕГИЧЕСКО ПЛАНИРАНЕ И УПРАВЛЕНИЕ НА КРИЗИ В АДМИНИСТРИРАНЕТО НА ОБЩЕСТВЕНОТО ЗДРАВЕОПАЗВАНЕ
Докторант Анна Коллару, докторант Алексиос Антониос Колларос..... 439

МОДЕЛИ НА ПУБЛИЧНО-ЧАСТНО ПАРТНЬОРСТВО ЗА ФИНАНСИРАНЕ НА ОБЩИНСКАТА ТРАНСПОРТНА ИНФРАСТРУКТУРА
Докторант Атанаска Василева 447

ИНТЕГРИРАН ПОДХОД ЗА ПОВИШАВАНЕ НА ЕФЕКТИВНОСТТА НА АДМИНИСТРАТИВНИТЕ ПРОЦЕСИ В ГЛОБАЛНИТЕ АУТСОРСИНГ СТРУКТУРИ
Докторант Веселин Василев Михайлов..... 451

СВЪРЗВАЩИТЕ СТРУКТУРИ В СИСТЕМАТА НА УПРАВЛЕНИЕ – МЯСТО И РОЛЯ
Докторант Галина Гатева-Христова..... 462

МЕЖДУНАРОДНА ТЪРГОВИЯ И ИКОНОМИЧЕСКИ БАРИЕРИ
Докторант Георги Спасов Витков 467

ДЕТЕРМИНАНТИ НА КЛИЕНТСКАТА УДОВЛЕТВОРЕНОСТ В ЗАСТРАХОВАНЕТО – ПОВЕДЕНЧЕСКИ И ДИГИТАЛНИ АСПЕКТИ
Докторант Десислава Кайрякова..... 474

ПРЕДИЗВИКАТЕЛСТВА ПРИ ИНТЕГРАЦИЯТА НА НЕСТРУКТУРИРАНИ И ПОЛУСТРУКТУРИРАНИ ДАННИ ВЪВ ФИНАНСОВО-СЧЕТОВОДНИТЕ СИСТЕМИ
Докторант Диян Николаев 482

WHO: TRANSFORMING ORGANIZATIONS THROUGH ESG CULTURE
PhD student Elton Rodrigo Titon 488

ВРЪЗКА МЕЖДУ ИНТЕГРИРАНОТО УПРАВЛЕНИЕ НА ОТПАДЪЦИТЕ И КРЪГОВИТЕ БИЗНЕС МОДЕЛИ
докторант Емил Найденов 496

ПРОГРАМНОТО БЮДЖЕТИРАНЕ КАТО ИНСТРУМЕНТ ЗА РЕАЛИЗАЦИЯ НА ОБЩИНСКИЯ ПЛАН ЗА РАЗВИТИЕ: МОДЕЛ ЗА ФИНАНСОВА УСТОЙЧИВОСТ
Докторант Емилия Върбанова 504

ТРАНСФОРМАЦИЯ НА БИЗНЕС МОДЕЛИТЕ В СЕКТОРА НА ВЪЗОБНОВЯЕМАТА ЕНЕРГИЯ В ЕВРОПЕЙСКИЯ СЪЮЗ В УСЛОВИЯТА НА ЗЕЛЕНИЯ ПРЕХОД
Докторант Жени Антонова 508

ИЗБОР МЕЖДУ ЛОКАЛЕН И ОБЛАЧНО БАЗИРАН ИЗКУСТВЕН ИНТЕЛЕКТ В СЪВРЕМЕННИТЕ БИЗНЕС ИНФОРМАЦИОННИ СИСТЕМИ
Докторант Зорница Иванова 516

ОТ ТЕОРИЯ КЪМ ПРАКТИКА: ИНТЕГРИРАНЕ НА УСТОЙЧИВОСТТА В УПРАВЛЕНИЕТО НА ПРОЕКТИ КАТО ФАКТОР ЗА КОНКУРЕНТОСПОСОБНОСТ НА БЪЛГАРСКАТА ИКОНОМИКА
Докторант Ивелина Станева 523

ВЪЗМОЖНОСТИ И ПРЕДИЗВИКАТЕЛСТВА ПРИ ИЗПОЛЗВАНЕТО НА ИЗКУСТВЕНИЯ ИНТЕЛЕКТ ЗА ОПТИМИЗАЦИЯ НА АДМИНИСТРАТИВНИТЕ ПРОЦЕСИ В ЗДРАВЕОПАЗВАНЕТО
докторант Йоан Парашкевов Денев 528

ВЪЗМОЖНОСТИ И ПРЕДИЗВИКАТЕЛСТВА ПРЕД ВНЕДРЯВАНЕТО НА ИЗКУСТВЕН ИНТЕЛЕКТ В МАЛКИ И СРЕДНИ ПРЕДПРИЯТИЯ
Докторант Йоанна Иванова Бакалова 536

ИНФОРМАЦИОННА СИГУРНОСТ В СЪВРЕМЕННИТЕ ОБУЧИТЕЛНИ ПЛАТФОРМИ
Докторант Лора Първанова 551

ДЕФИНИРАНЕ НА БЛОКЧЕЙН: ХАРАКТЕРИСТИКИ И КЛЮЧОВИ КОМПОНЕНТИ
Докторант Любен Кирев 551

ФАКТОРИ ЗА ВНЕДРЯВАНЕ НА ИНОВАЦИИ В ПУБЛИЧНИЯ СЕКТОР
Докторант Мария Савова 557

УПРАВЛЕНИЕ НА НЕФИНАНСОВИЯ РИСК ЧРЕЗ КСО В БЪЛГАРИЯ
Докторант Мария Цветанова 565

СРАВНИТЕЛНА ХАРАКТЕРИСТИКА НА МЕХАНИЗМИТЕ ЗА ВНЕДРЯВАНЕ НА КОМПЕТЕНТНОСТИ ПО ИКОНОМИКА
Докторант Милена Димитрова..... 569

СРАВНИТЕЛЕН АНАЛИЗ НА ДИГИТАЛНИ ПЛАТФОРМИ НА БЪЛГАРСКИЯ ПАЗАР ЧРЕЗ ИНДЕКС НА ПАЗАРНАТА ПРИВЛЕКАТЕЛНОСТ (MAS): NETFLIX, TRENDYOL И TEMU
Докторант Невин Ангелова..... 573

СТЕЙБЪЛКОЙНИТЕ В ТРАНСГРАНИЧНИТЕ РАЗПЛАЩАНИЯ: ПАЗАРНА КОНЦЕНТРАЦИЯ И РЕГУЛАТОРНИ ЕФЕКТИ ОТ MICA
Докторант Пенко Ангелов Бяливанов..... 580

ДЕТЕРМИНАНТИ НА КОРПОРАТИВНАТА СОЦИАЛНА ОТГОВОРНОСТ В МЕЖДУНАРОДНИ КОМПАНИИ ЗА БИЗНЕС УСЛУГИ
Докторант Петьо Божинов..... 588

КОНЦЕПТУАЛНА РАМКА НА ВНЕДРЯВАНЕТО НА ЗЕЛЕНИ ТЕХНОЛОГИИ В ПУБЛИЧНИЯ СЕКТОР
Докторант Радослав Асенов..... 596

УПРАВЛЕНСКИ ПРЕДИЗВИКАТЕЛСТВА ПРЕД ПУБЛИЧНИЯ СЕКТОР В УСЛОВИЯТА НА ДИГИТАЛНА ТРАНСФОРМАЦИЯ И ОТВОРЕНИ ИНОВАЦИИ
Докторант Сание Иса..... 604

TRANSFORMATIONAL LEADERSHIP AND AFFECTIVE ORGANIZATIONAL COMMITMENT: A FOCUSED NARRATIVE REVIEW
PhD student Slagjana Cvetkovska Mousa..... 611

ПРЕОДОЛЯВАНЕ НА ПРОПАСТТА В ЕКОЛОГИЧНИЯ ИНТЕГРИТЕТ: СРАВНИТЕЛЕН АНАЛИЗ НА РЕГУЛАТОРНАТА СТРОГОСТ НА СИСТЕМАТА ЗА ТЪРГОВИЯ С ЕМИСИИ НА ЕВРОПЕЙСКИЯ СЪЮЗ И ДОБРОВОЛНИТЕ ВЪГЛЕРОДНИ ПАЗАРИ
Докторант Стефани Георгиева, Докторант, Антони Георгиев..... 618

ВНЕДРЯВАНЕ НА ГЕНЕРАТИВЕН ИЗКУСТВЕН ИНТЕЛЕКТ И ИНТЕЛИГЕНТНИ АГЕНТИ В БИЗНЕС АНАЛИЗА: ТЕХНИЧЕСКИ ИЛИ ОРГАНИЗАЦИОНЕН ПРОБЛЕМ
Докторант Таньо Георгиев Георгиев..... 626

РЕШЕНИЯ ЗА ИНТЕЛИГЕНТНА МОБИЛНОСТ В СМАРТ ГРАДОВЕТЕ В БЪЛГАРИЯ
Докторант инж. Тихомир Панов..... 634

ГЕОГРАФСКА ЕКСПАНЗИЯ ЧРЕЗ МРЕЖОВИ СТРАТЕГИИ В СЕЛСКОСТОПАНСКАТА ТЪРГОВИЯ
Докторант Тотю Иванов..... 639

ПРИЛАГАНЕ НА АРХИТЕКТУРИ, УПРАВЛЯВАНИ ОТ СЪБИТИЯ, И МИКРОСЪРВИСИ ЗА ИНТЕЛИГЕНТНА АВТОМАТИЗАЦИЯ В ИНДУСТРИЯ 5.0
Докторант Яница Димитрова..... 643

ГЕНЕРАТИВНИЯТ ИЗКУСТВЕН ИНТЕЛЕКТ КАТО КАТАЛИЗАТОР НА ПЛАТФОРМЕНАТА ИНТЕРНАЦИОНАЛИЗАЦИЯ НА МАЛКИТЕ И СРЕДНИ ПРЕДПРИЯТИЯ
Докторант Юксела Шефкетева Брахимбашева..... 648

УЧИЛИЩЕТО КАТО СПЕЦИФИЧНА СРЕДА ЗА УПРАВЛЕНИЕ НА ПРОЕКТНАТА ДЕЙНОСТ
Магистър Лора Николова 656

PSYCHOLOGICAL METHODS FOR MARKETING INFLUENCE ON CONSUMER BEHAVIOR
Anna Grigorova, student 663

DIGITAL TRANSFORMATION AND CUSTOMER RELATIONSHIP MANAGEMENT IN SMES: A COMPARATIVE STUDY OF ROMANIA AND BULGARIA
Student Elena Deatcu – Gavril, Student Adriana – Daniela Urucu, Student Diana – Marina Vasile, Student Angelo – Patrick – Cosmin Baicu..... 670

СЪВРЕМЕННОТО ПРЕДПРИЯТИЕ В УСЛОВИЯ НА ГЛОБАЛИЗАЦИЯ И ДИГИТАЛИЗАЦИЯ
Студент Милена Христова 679

MANAGING RESEARCH–EDUCATION SYNERGIES FOR ENGINEERING AND SCIENCE CAREER DEVELOPMENT IN THE UNIVERSITY ENVIRONMENT: THE CASE OF VALAHIA UNIVERSITY OF TÂRGOVIȘTE

Associate Professor, Dr. Eng., Sălișteanu I.C.[1]
Professor, Dr. Eng., Dunea D.E.C.[2]
Professor, Dr. Eng., Coandă H.G.[3]
Associate Professor, Dr. Eng., Udroiu I.N.[4]
Professor, Dr. Croitoru G.[5]
Senior Research Scientist, Dr. Eng., Nicolescu C.M.*[6]
Associate Professor, Dr. Bumbac M.[7]
Associate Professor, Dr. Eng., Alexandrescu D.C.[8]
University Lecturer Dr., Hossu A.M.[9]
Associate Professor, Dr. Eng., Angelescu N.[10]
Associate Professor, Dr. Eng., Popa I.F.[11]
University Lecturer Dr., Catangiu A.[12]

Abstract: *The increasing demand for highly qualified specialists in engineering and science highlights the need for stronger synergies between research and education within universities. This paper explores how structured research–education integration can support engineering and science career development in the university environment, focusing on the case of Valahia University of Târgoviște. The study analyzes institutional mechanisms that facilitate student, master's, and doctoral involvement in research activities, including access to modern research infrastructure, participation in research projects, and support for academic works such as bachelor's, master's and PhD theses. Particular attention is given to the managerial role of research structures in enhancing learning outcomes, fostering research-based education, and promoting STEM career pathways, including outreach activities targeting pre-university students. The findings emphasize the importance of effective management of research resources and collaborations in strengthening educational quality and employability. The*

[1] Valahia University of Târgoviște, Romania; e-mail: [cornel.salisteanu@valahia.ro]
[2] Valahia University of Târgoviște, Romania; e-mail: [daniel.dunea@valahia.ro]
[3] Valahia University of Târgoviște, Romania; e-mail: [henri.coanda@valahia.ro]
[4] Valahia University of Târgoviște, Romania; e-mail: [iulian.udroiu@valahia.ro]
[5] Valahia University of Târgoviște, Romania; e-mail: [gabriel.croitoru@valahia.ro]
[6] Valahia University of Târgoviște, Romania; e-mail*: [cristina.nicolescu@valahia.ro]
[7] Valahia University of Târgoviște, Romania; e-mail: [marius.bumbac@valahia.ro]
[8] Valahia University of Târgoviște, Romania; e-mail: [daniela.alexandrescu@valahia.ro]
[9] Valahia University of Târgoviște, Romania; e-mail: [ana.hossu@valahia.ro]
[10] Valahia University of Târgoviște, Romania; e-mail: [nicoleta.angelescu@valahia.ro]
[11] Valahia University of Târgoviște, Romania; e-mail: [florin.popa@valahia.ro]
[12] Valahia University of Târgoviște, Romania; e-mail: [adrian.catangiu@valahia.ro]

paper contributes to the discussion on best practices in managing research–education synergies for sustainable academic and professional development in engineering and science fields.

Keywords: *Higher Education Management, Research Infrastructure, Engineering and Science Careers*

JEL: I23, I25

1. Introduction

The transition towards a green and digital economy has sharply increased the demand for highly qualified specialists in engineering and the natural sciences. Universities are expected to train specialists who can formulate and solve complex problems, work with advanced equipment, interpret data, and whose knowledge and skills are aligned with the evolving needs of the labour market. For regional universities located outside large metropolitan hubs this expectation comes with a double challenge: attracting enough pupils into science, technology, engineering and mathematics (STEM) programmes and then retaining them along the pathway from the bachelor's degree to master's and doctoral studies, often with limited financial and human resources.

The idea that research and teaching reinforce each other goes back to the Humboldtian university, in which students and teachers collaborate in research-like learning (Elton, 2008). The Humboldtian university model is founded on the integration of research and education, with students learning not only established knowledge but also how knowledge is created through inquiry, experimentation and critical thinking. Clark (1995) described this as a close interconnection between research, teaching and student learning, while also showing that mass enrolment and specialized research funding can create a „research drift“ and a „teaching drift“ that gradually pull these activities apart. The employability agenda adds a further tension with research-based teaching (Macheridis et al., 2020). This tension reinforces the need to anchor university education in the European Quadruple/Quintuple Helix framework, strengthening interaction between academia, industry, public authorities and society, while integrating environmental and sustainability considerations, so that research-based teaching remains scientifically robust and responsive to labour-market and societal needs.

Research–education synergies therefore have to be designed, resourced and monitored, which makes them a genuine object of university management.

This paper examines how structured research–education integration can support the attractiveness of tertiary education in STEM fields by encouraging students' interest in science and engineering and improving their perception of STEM-related study and career pathways. The analysis focuses on (1) how research–education outreach activities can stimulate pre-university pupils' interest in STEM studies and careers and encourage their transition towards tertiary STEM education; (2) which institutional mechanisms enable bachelor's, master's and

doctoral students to engage in research; and (3) which managerial levers and indicators can sustain these synergies over time. The study adopts a qualitative single-case approach drawing on internal institutional documents from Valahia University of Târgoviște, Romania.

2. Research–education synergies: conceptual background

2.1. The interconnection between research and teaching

Empirical work on the research–teaching interconnection shows that students value being taught by research-active staff, but that the main learning benefits appear only when they move from being an audience for research to being participants in it. In a study of almost 200 students, Healey et al. (2010) found that awareness of the nature of research and the development of research skills increased most when students were actively involved in research projects, and that several students saw clear benefits for their future employment.

Engineering and science programmes are well suited to research-based learning because much of their teaching already takes place in laboratories. In a course built around an authentic research project, Wallin et al. (2017) found that students learned to navigate the field, to do real research and to work with others, and attributed this to engaging students in the whole inquiry process in an authentic context. The nexus is thus a continuum from research-led teaching, where students learn about research results, to research-based teaching, where they produce results themselves.

2.2. From research experiences to STEM career pathways

Recent evidence increasingly shows that STEM career pathways are shaped well before students enter higher education. Kitchen et al. (2018), in a study involving 845 participants and 15,002 controls, found that pupils attending university-run STEM summer programmes had 1.4 times the odds of aspiring to a STEM career, increasing to 1.8 times when programmes explicitly demonstrated the real-world relevance of STEM. More recent studies reinforce this perspective: outreach activities may not independently determine the choice of a university field, but they can strengthen pupils' existing interest and confidence in STEM pathways (Jagušt et al., 2024). Bahr et al. (2025) further argue that such support is most effective when offered regularly, embedded in school curricula, and connected to universities, mentoring and authentic STEM environments.

This pre-university foundation is subsequently reinforced through direct research engagement during higher education. Hernández et al. (2018) demonstrated, in a ten-year matched study, that sustained faculty-mentored research engagement was particularly important, with stronger effects observed when students participated for at least ten hours per week over two or more semesters. Linn et al. (2015) nevertheless caution that much of the evidence relies on self-reported outcomes and identify mentoring as a central mechanism. At doctoral

level, attention has increasingly shifted towards transversal skills, career adaptability and employability beyond academia (Ashonibare, 2022). Taken together, these studies suggest that STEM career development is a cumulative process beginning before university and strengthened through sustained, mentored and authentic research experiences whose duration, relevance and institutional design can be actively influenced by university management.

3. Institutional mechanisms at Valahia University of Târgoviște

Valahia University of Târgoviște is a medium-sized, comprehensive public university located in Târgoviște, Dâmbovița County, within Romania's South-Muntenia development region, corresponding to the NUTS II level of the European Union's territorial classification system. The university is rooted in the long-standing cultural and educational tradition of Târgoviște, the former capital of Wallachia, a historical principality that covered much of what is now southern Romania. The city has played an important role in the development of education and culture since the 17th century, when early forms of higher learning, humanistic education and printing activities were already established here. Building on this historical legacy, Valahia University developed as a modern public higher-education institution with a strong regional identity and European orientation, contributing to the academic, social, cultural and economic development of Târgoviște and the surrounding region.

At present, the university comprises ten faculties, covering fields such as electrical engineering, information technology and computer science, environmental engineering, agri-food engineering, materials engineering and mechanics, and fundamental sciences, including chemistry, physics and mathematics, alongside economics, law and administrative sciences, theology, education sciences, and the humanities, including history, geography, communication studies, foreign languages, and music, as well as sports science, physical therapy and rehabilitation.

3.1. Research infrastructure as a shared learning resource

Valahia University of Târgoviște has a diversified institutional and research infrastructure that supports advanced research. A central role is played by its Institute of Multidisciplinary Research for Science and Technology (www.icstm.valahia.ro), together with the university's 21 research centres, which operate within faculties and cover the full range of university's academic and research fields. These structures support fundamental and applied research, technological development, prototyping, RDI services and knowledge transfer, while also enabling the direct involvement of bachelor's, master's and doctoral students, as well as early-career researchers, in research activities. The Institute hosts the university's main research infrastructure, housed in a building of approx. 7,250 m² and comprising 35 research laboratories, five technological laboratories, as well as dedicated spaces for scientific events and an amphitheater.

From a managerial perspective, a significant measure was to treat the infrastructure available within the Institute not only as a research asset but also as a shared learning resource. In practice, this includes supervised access of bachelor, master, and PhD students, compulsory training in laboratory safety and equipment use, scheduling arrangements that protect thesis-related work, and the designation of a responsible researcher for each laboratory who may also act as a mentor. Students are therefore able to learn and apply procedures similar to those used in funded research projects.

The Institute and its laboratories is also regularly opened to pre-university pupils, particularly during the nationally regulated Școala Altfel („Different School") and Săptămâna Verde („Green Week") programmes coordinated by the Romanian Ministry of Education. During these periods, large numbers of pupils visit the Institute and take part in hands-on experiments, interactive demonstrations and research-oriented activities delivered by its full-time researchers. These experiences provide early exposure to authentic scientific environments and help stimulate interest in science, engineering and STEM-related study and career pathways.

3.2. Outreach as the first stage of the pathway: the Joy of Science initiative

The *Joy of Science* initiative extends research-based learning to pre-university pupils across South-Muntenia and connects these activities with regional priorities such as energy efficiency, waste reduction, and digital inclusion. Initially launched as a pilot in Dâmbovița County, the initiative was subsequently scaled up to cover all seven counties of the region. During the 2025–2026 academic year, particular attention was given to pupils from rural areas, who represented more than 60% of the over 2,000 participants reached by the programme. By exposing pupils to authentic research environments, scientific experimentation, and direct interaction with university staff and students, the initiative aims to strengthen interest in STEM subjects, improve perceptions of STEM-related careers, and encourage progression towards tertiary education in science and engineering fields. Its components are summarised in Figure 1.

Two features give the *Joy of Science* initiative enhanced relevance for STEM career development. First, it progresses from demonstration to co-creation: in mixed teams of pupils and university students, supported by coordinators from both pre-university education and university teaching and research staff, participants formulate hypotheses and interpret data themselves. Second, the topics addressed have clear local relevance—including environmental monitoring, air-pollution measurement, food safety, material durability, digital microscopy, and fruit-based biobatteries—which is consistent with the findings of Kitchen et al. (2018), who showed that the real-world relevance of STEM activities was strongly associated with pupils' STEM career aspirations. University students, in turn, gain valuable experience in mentoring and science communication, while university

staff strengthen their outreach, mentoring and public-engagement skills and gain further experience in translating research content into accessible learning experiences for younger audiences.

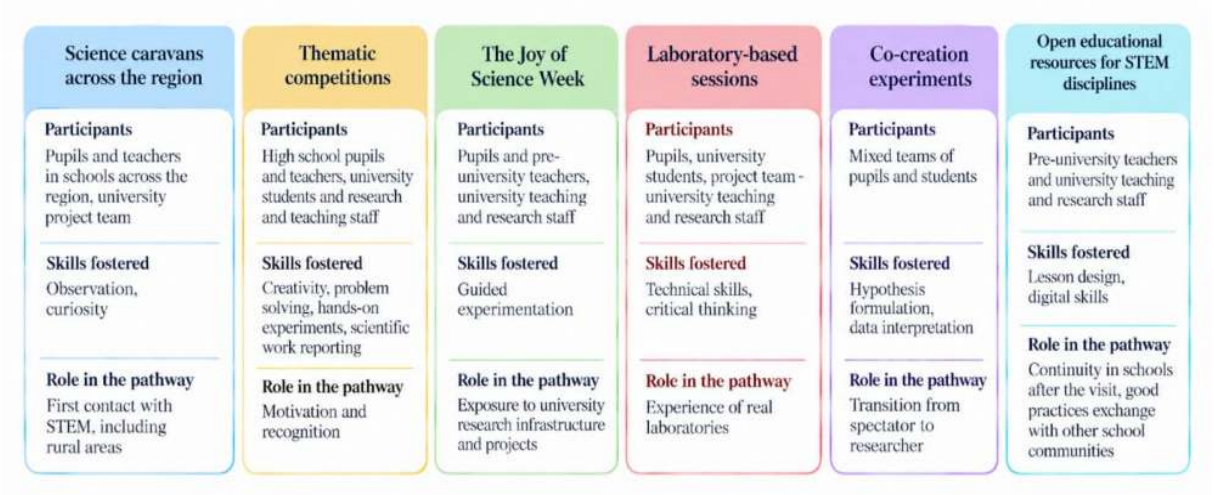

Figure 1. Components of the Joy of Science initiative and their role in the STEM pathway

3.3. Involvement of bachelor's, master's and doctoral students in research

Four mechanisms connect students with research at Valahia University of Targoviste. First, bachelor's and master's theses are increasingly defined within the research lines of the Institute and the Research Centres, so that thesis topics derive from ongoing projects and use real experimental data. Second, students and doctoral candidates are included in project teams for national and international projects, where they learn project planning, reporting and teamwork. Third, results obtained by students are presented at student scientific sessions and conferences and, when mature, are published in co-authorship with their supervisors. Fourth, doctoral candidates and early-career researchers also mentor bachelor's and master's students, creating a layered supervision model that encourages learning from more experienced peers. This near-peer approach can facilitate the transfer of tacit research practices, strengthen students' confidence and engagement, and support the development of disciplinary and research skills through interaction within the research team (Meschitti V., 2019). Thesis work spanning two or more semesters also reaches the intensity of engagement that Hernández et al. (2018) associate with persistence in science.

4. Managing the synergies: mechanisms, tensions and monitoring

The analysed case of Valahia University of Targoviste highlights *five managerial mechanisms* that have been progressively introduced to strengthen research–education synergies, are currently under implementation, being further developed and refined, as will be descried in the following paragraphs.

Strategic alignment connects institutional research priorities with study programmes, allowing research themes to generate thesis topics, student projects and outreach activities.

Resource allocation seeks to recognise supervision, mentoring and outreach within academic workload and staff evaluation, an important issue given the well-documented tensions between teaching and research demands on academic staff (McKinley et al., 2021; Krakovich et al., 2023).

Access rules for research infrastructure are designed to balance the requirements of funded projects with its use for student learning and training, as well as for science outreach and communication activities involving pre-university pupils.

Partnerships with schools, school inspectorates, companies and other regional actors provide participants, authentic problems, mentoring opportunities and links to future employment.

Finally, *monitoring* is being developed to make these synergies more visible in institutional decision-making and to support their systematic evaluation. Figure 2 summarises the resulting pilot model, in which these levers act on resources, integration mechanisms and outcomes across the STEM education and career pathway. As the model is still being implemented and tested, it should be regarded as an evolving framework, with further refinement expected as monitoring evidence accumulates and more robust indicators are developed.

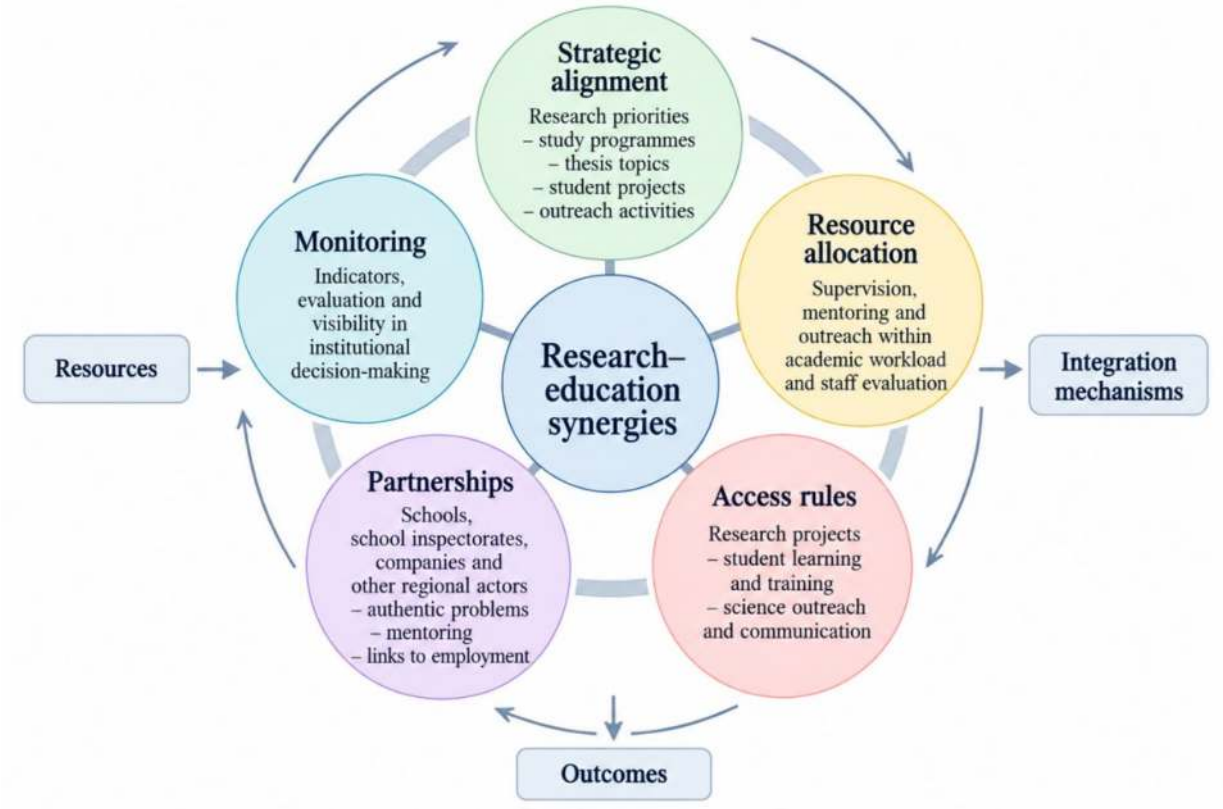

Figure 2. Management model for research–education synergies at Valahia University of Targoviste

These managerial mechanisms must also address tensions between project deliverables and teaching commitments, the dependence of outreach activities on

short-term funding, and unequal access to research opportunities. This is particularly relevant in the case of a comprehensive university such as Valahia University of Targoviste, where a broad range of academic fields, disciplinary cultures and programme profiles must be accommodated, and where access to research opportunities should be ensured as equitably as possible across different faculties and study areas. At the same time, university management must balance these internal integration objectives with broader institutional performance priorities, including maintaining visibility and a competitive position in international university rankings and benchmarking systems such as THE, QS and SCImago, and others, as well as in the national Metaranking exercise.

To support institutional decision-making, we are currently working towards the development of composite, normalized indicators to be calculated and reported annually. Possible indicators include the share of theses involving experimental work conducted within the research infrastructure, the number of students and doctoral candidates participating in research project teams, outputs co-authored with students, the number of pupils involved in co-creation activities, and progression rates from bachelor's to master's and doctoral STEM programmes.

A useful future development could be the introduction of weights and target values for the individual indicators, allowing institutional priorities to be reflected while supporting a balanced interpretation across different dimensions of performance. Such an approach could provide a transparent monitoring framework, while recognizing that the resulting monitoring tool would primarily capture the intensity and distribution of activity rather than demonstrate causal impact.

5. Conclusion

The analysis suggests that it *research–education synergies* should be understood as an *active management task* rather than as an automatic by-product of research activity. In the case of Valahia University of Târgoviște, the institutional research structure provides the resources for integration. These resources are translated into learning through research-based theses, student participation in project teams, co-authorship, access to advanced research infrastructure and layered mentoring, including learning from more experienced peers. Through initiatives like the *Joy of Science* this logic is extended towards pupils in the pre-university level by combining hands-on experimentation, co-creation, mentoring and topics with clear real-world relevance, with the broader aim of strengthening interest in STEM studies and career pathways.

The study-case also shows that such integration requires deliberate managerial mechanisms, including strategic alignment, resource allocation, access rules, partnerships and monitoring. Their implementation must remain sensitive to the characteristics of a comprehensive university, where multiple disciplinary cultures and study fields coexist, and to wider institutional priorities related to academic performance, international visibility and participation in national and international ranking systems. The model described here is still evolving, and its

further development will require more systematic monitoring and more robust indicators capable of capturing not only the intensity of activities, but also their distribution across study fields and target groups.

As a qualitative single-case study, the present analysis does not establish causal effects on educational or career outcomes. Future research could therefore follow cohorts of pupils and research-active university students over time, examining their progression into tertiary STEM education, doctoral studies, and employment. Further methodological development, together with the testing of composite indicators for monitoring research–education integration, could support institutional learning and decision-making, while acknowledging that such tools would not, in themselves, provide direct evidence of causality.

References

Ashonibare, A. A. (2022). Doctoral education in Europe: Models and propositions for transversal skill training. *Studies in Graduate and Postdoctoral Education, 14*(2), 164–170. https://doi.org/10.1108/SGPE-03-2022-0028

Bahr, T., Brændle, M., & Zinn, B. (2025). STEM career choices for K–12 students and the influencing factors—A comparison of students in different support programs. *Journal for STEM Education Research, 8*(1), 1–29. https://doi.org/10.1007/s41979-024-00129-w

Clark, B. R. (1995). *Places of inquiry: Research and advanced education in modern universities*. University of California Press.

Elton, L. (2008). Collegiality and complexity: Humboldt's relevance to British universities today. *Higher Education Quarterly, 62*(3), 224–236.

Healey, M., Jordan, F., Pell, B., & Short, C. (2010). The research–teaching nexus: A case study of students' awareness, experiences and perceptions of research. *Innovations in Education and Teaching International, 47*(2), 235–246.

Hernández, P. R., Woodcock, A., Estrada, M., & Schultz, P. W. (2018). Undergraduate research experiences broaden diversity in the scientific workforce. *BioScience, 68*(3), 204–211.

Jagušt, T., Sović Kržić, A., & Bojanjac, D. (2024). From outreach to enrollment: Exploring the influence of STEM outreach activities on student career choices and perceptions. In *2024 IEEE Global Engineering Education Conference (EDUCON)* (pp. 1–6). IEEE. https://doi.org/10.1109/EDUCON60312.2024.10578907

Kitchen, J. A., Sonnert, G., & Sadler, P. M. (2018). The impact of college- and university-run high school summer programs on students' end of high school STEM career aspirations. *Science Education, 102*(3), 529–547.

Krakovich, V., Coates, D., & Shakina, E. (2023). Research-teaching nexus: The new answer to the old question. Higher Education Quarterly, 77(4), 831–852. https://doi.org/10.1111/hequ.12435

Linn, M. C., Palmer, E., Baranger, A., Gerard, E., & Stone, E. (2015). Undergraduate research experiences: Impacts and opportunities. *Science, 347*(6222), 1261757. https://doi.org/10.1126/science.1261757

Macheridis, N., Paulsson, A., & Pihl, H. (2020). The Humboldtian ideal meets employability? University teachers and the teaching–research relationship in marketized higher education. *Industry and Higher Education, 34*(5), 303–311. https://doi.org/10.1177/0950422219898371

McKinley, J., McIntosh, S., Milligan, L., & Mikołajewska, A. (2021). Eyes on the enterprise: Problematising the concept of a teaching-research nexus in UK higher education. *Higher Education, 81*, 1023–1041. https://doi.org/10.1007/s10734-020-00595-2

Meschitti, V. (2019). Can peer learning support doctoral education? Evidence from an ethnography of a research team. *Studies in Higher Education*, *44*(7), 1209–1221. https://doi.org/10.1080/03075079.2018.1427711

Wallin, P., Adawi, T., & Gold, J. (2017). Linking teaching and research in an undergraduate course and exploring student learning experiences. *European Journal of Engineering Education, 42*(1), 58–74.