

BOOK OF PROCEEDINGS



4th INTERNATIONAL CONFERENCE ON SOCIAL AND HEALTH SCIENCES

April 22-23, 2026, Prishtina – Kosova



4th INTERNATIONAL CONFERENCE ON SOCIAL AND HEALTH SCIENCES

Building Futures: Innovation, Humanism, and Cooperation in a Divided World

1. From Smart Tech to Green Impact: Rethinking Business and AI for Tomorrow
2. The Future of Health: AI and Human Well-Being
3. Global Shifts: Geopolitics, Security, and Peace in Times of Uncertainty

Book of Proceedings

EDITORS:

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Rambaja and Rrezart Prebreza

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International Conference on Social and Health Sciences**Book of Proceedings****Building Futures: Innovation, Humanism, and Cooperation in a Divided World**

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The 4th International Conference on Social and Health Sciences will bring together global experts, researchers, and professionals to explore innovative solutions and strategies for building a future based on innovation, humanism and cooperation in today's divided world. This one-day event will be organized into three thematic sessions, each addressing crucial aspects of AI and business, healthcare and human well-being, as well as geopolitics, security, and regional and global cooperation in times of uncertainty.

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From Smart Tech to Green Impact: Rethinking Business and AI for Tomorrow

CIRCULAR ECONOMY AND GREEN GROWTH: PATHWAYS TO A HEALTHIER KOSOVO

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Abstract

This study evaluates the role of circular economy and green growth frameworks in improving environmental quality and public health outcomes in Kosovo. Kosovo continues to function predominantly within a linear economic model characterised by extraction, consumption, and disposal, generating substantial waste streams while recovering only a minimal share of materials for reuse or recycling. Official evidence indicates that municipal waste collection exceeded 471,000 tonnes in 2023 and remained close to 450,000 tonnes in 2024, while the recycling rate is estimated at approximately 2.5% of annually generated waste—among the lowest in the Western Balkans (OECD, 2025). Landfill dependency, outdated collection infrastructure, weak source separation, and inadequate treatment capacity contribute to persistent pollution of air, water, and soil. These environmental pressures carry direct and indirect health consequences including respiratory illness, cardiovascular disease, and hazardous contaminant exposure. Updated European Environment Agency data confirm that Kosovo records approximately 2,135 attributable premature deaths annually from fine particulate matter exposure—one of the highest relative mortality rates in Europe (European Environment Agency [EEA], 2024). Water contamination and poor hygiene further contribute to child mortality and chronic exposure risks. Against this background, the paper analyses how circular economy principles—waste prevention, reuse, recycling, material recovery, and extended product life cycles—can be aligned with green growth strategies emphasising low-carbon energy, innovation, and environmentally responsible development. Using a mixed-methods design grounded in secondary statistics, policy analysis, and documented stakeholder perspectives from institutional roadmaps and development reports, the study assesses Kosovo's current policy framework, implementation barriers, and reform opportunities. The findings indicate that Kosovo has developed an emerging policy architecture through its Circular Economy Roadmap, the Integrated Waste Management Strategy, packaging waste regulation, and related environmental planning documents. However, implementation remains constrained by infrastructural deficits, limited financing, insufficient enforcement, weak municipal capacity, and low public awareness. The paper concludes that embedding circular economy and green growth principles into environmental and public health policy is essential for reducing pollution exposure and strengthening long-term societal well-being. Strategic priorities include stronger regulatory enforcement, investment in recycling and wastewater infrastructure, cleaner household heating, environmental education, and improved intersectoral governance linking environmental performance to health outcomes.

Keywords: circular economy; green growth; public health; waste management; Kosovo; Western Balkans; sustainable development

INTRODUCTION

The relationship between environmental degradation and population health has become one of the defining policy issues of contemporary development. Countries that remain locked into linear production and consumption systems—where resources are extracted, transformed, consumed, and discarded—face rising waste volumes, inefficient material use, ecosystem stress, and escalating health costs. For Kosovo, these challenges are particularly acute because environmental management deficits intersect with rapid urbanisation, dependence on lignite-based energy, weak waste recovery systems, and limited public infrastructure. The result is not simply an environmental problem; it is a development and health problem that affects respiratory disease burdens, water safety, quality of life, and the long-run resilience of communities (World Bank, 2019; World Bank, 2018).

The circular economy offers a systemic alternative to this linear model. Rather than treating waste as an inevitable by-product of economic activity, it seeks to redesign systems so that materials remain in productive use for longer, waste generation is minimised, and environmental externalities are reduced. In parallel, the green growth approach emphasises economic transformation that decouples growth from resource depletion and pollution, relying on low-carbon technologies, renewable energy, efficient infrastructure, and sustainable investment. In policy terms, circular economy and green growth are mutually reinforcing: the former focuses on closing material loops and reducing waste, while the latter provides the broader macroeconomic and institutional framework for cleaner development (Ministry of Environment, Spatial Planning and Infrastructure [MMPHI], 2023; European Environment Information and Observation Network [Eionet], 2024).

In Kosovo, this transition is especially urgent. Official reporting shows that municipal waste collection reached 471,278 tonnes in 2023 and 449,707.93 tonnes in 2024, while sanitary landfill deposition reached 493,116.48 tonnes in 2023 and 468,111.50 tonnes in 2024 (Kosovo Environmental Protection Agency [KEPA], 2024). Recycling remains extremely limited: the Organisation for Economic Co-operation and Development (OECD, 2025) estimates Kosovo's recycling rate at approximately 2.5% of generated waste, confirming the country's position at the bottom of regional performance tables alongside Bosnia and Herzegovina (2.2%) and below Serbia (3.0%). Landfills remain below European standards, waste infrastructure is outdated, and source separation has seen little meaningful progress.

In a regional context, all Western Balkan economies face the challenge of transitioning from linear to circular systems, but Kosovo's position is particularly constrained by institutional capacity gaps and the absence of a formally adopted national circular economy strategy—a shortcoming identified by both the European Council on Foreign Relations (ECFR, 2025) and the RECONOMY programme (2024), which support business-level circularity across the region. The Green Agenda for the Western Balkans and the

EU4Green initiative (2022–2025) provide external momentum, but their translation into Kosovo-specific outcomes depends on domestic governance improvements.

This paper argues that the transition to a circular economy and green growth model should be understood not only as an environmental modernisation project but as an explicit public health strategy for Kosovo. By reducing landfill dependence, promoting cleaner energy and material use, improving water and waste infrastructure, and supporting behavioural change, Kosovo can lower pollutant exposure and improve population well-being. The paper therefore develops an integrated analysis of circular economy, green growth, and public health, focusing on the institutional and practical pathways through which environmental reform can contribute to a healthier Kosovo.

1. LITERATURE AND CONCEPTUAL BACKGROUND

The circular economy has emerged globally as a response to the limitations of the linear economic model. Its foundational principles—reducing material throughput, designing out waste, reusing products and components, recycling materials, and regenerating natural systems—were systematised by the Ellen MacArthur Foundation and have since been incorporated into the European Union's Circular Economy Action Plans of 2015 and 2020. The concept moves beyond end-of-pipe waste treatment by emphasising systemic redesign across value chains, encompassing production, consumption, logistics, packaging, and product life-cycle management. In practical terms, circularity can reduce landfill volumes, lower raw material demand, decrease emissions from extraction and transport, and generate local economic opportunities in repair, recycling, remanufacturing, and secondary materials markets (MMPHI, 2023; Eionet, 2024).

Green growth complements this logic by focusing on structural economic transformation. Rather than assuming that environmental protection inhibits economic development, the green growth paradigm—advanced by international institutions including the OECD, UN Environment Programme, and World Bank—views ecological efficiency, innovation, renewable energy, sustainable infrastructure, and natural capital protection as foundations for durable prosperity. Within developing and transition contexts, green growth is especially relevant because it frames environmental reform as an opportunity to improve competitiveness, reduce import dependence, attract investment, and strengthen social welfare (OECD, 2025). In the Western Balkans, this agenda has been reinforced through the Green Agenda for the Western Balkans and the EU4Green programme, which explicitly link circularity, decarbonisation, waste reform, and environmental governance to the region's EU accession trajectories (ECFR, 2025).

The health relevance of circular economy and green growth frameworks is increasingly recognised in the academic and policy literature. Poor waste management can release toxic substances into soil and water, enable uncontrolled burning, and increase vector-borne disease risks. Air pollution from combustion—whether in power generation, transport, industry, or household heating—contributes to respiratory

disease, cardiovascular illness, stroke, and premature death. Water pollution and inadequate wastewater treatment increase exposure to pathogens, heavy metals, and nutrients, affecting children disproportionately. Circular economy interventions that reduce waste burning, recover materials, improve wastewater treatment, and promote cleaner energy are therefore not merely ecological measures; they constitute interventions on the social determinants of health (World Bank, 2019; World Bank, 2018; World Health Organization [WHO], 2024).

For Kosovo, the conceptual intersection of circularity, green growth, and health is particularly compelling because environmental burdens are already materially visible in everyday life. The Circular Economy Roadmap of Kosovo explicitly frames the transition as one capable of creating a healthier environment, improving quality of life, supporting resilience, and stimulating green jobs (MMPHI, 2023). This framing is important because it shifts policy discourse away from narrow waste compliance toward a broader social transition linking environment, economy, and human well-being. As the United Nations Development Programme (UNDP, 2023) notes, Kosovo's commitment to the Green Agenda for the Western Balkans provides the normative foundation for this transition; the challenge lies in operationalising commitments through implementation.

2. ENVIRONMENTAL AND HEALTH CONTEXT IN KOSOVO

Kosovo's environmental pressures reflect the cumulative effects of a linear economy characterised by weak recovery and treatment systems. The official municipal waste report identifies serious landfill deficiencies, including the absence of leachate treatment systems, insufficient gas ventilation, non-daily waste coverage, lack of source separation infrastructure, frequent fires, and inadequate fencing and signage (KEPA, 2024). Waste collection and transport equipment operated by many municipalities is outdated, averaging approximately 15 years in age. These deficiencies indicate that Kosovo's waste management problem is not only one of waste quantity but also of technological obsolescence, weak operational control, and inadequate environmental safeguards. With a recycling rate of approximately 2.5%, Kosovo recovers a negligible fraction of its material stream, performing comparably to Bosnia and Herzegovina (2.2%) and marginally below Serbia (3.0%), illustrating that the linear economy is characteristic of the broader Western Balkans region (OECD, 2025).

Air pollution constitutes the most acute public health challenge. According to the EEA's 2024 burden of disease assessment, Kosovo and North Macedonia record the highest relative impacts of PM_{2.5} exposure in Europe, measured as years of life lost per 100,000 inhabitants over 30 years (EEA, 2024). The EEA's 2025 country fact sheet updates the annual toll to approximately 2,135 attributable premature deaths in Kosovo in 2023—a figure substantially higher than earlier World Bank estimates and reflective of improved methodology and expanded monitoring (EEA, 2025). Fine particulate matter is associated with ischemic heart disease, stroke, chronic obstructive pulmonary disease, lung cancer, and lower respiratory

infections. The earlier World Bank (2019) study attributed the annual economic cost of this pollution burden to approximately USD 240 million, equivalent to 3.6% of GDP in 2016, a figure that would be considerably higher under current prices and population estimates.

The burden is intensified by household air pollution. The WHO's (2024) assessment found a strong relationship between wood use for heating and adverse health outcomes in Kosovo. Among respondents using wood for heating, 69% reported irritation of the eyes, nose, and throat and difficulty breathing, compared with 28% among electricity users. Households using wood also reported significantly more headaches, dizziness, fatigue, respiratory symptoms, and cardiovascular problems. The WHO recommends stronger public health monitoring, expanded district heating, subsidies for cleaner household energy, and municipal air quality action plans as priority responses.

The impacts on children and vulnerable communities are particularly alarming. UNICEF (2024) reporting from Obiliq—Kosovo's most polluted district, situated adjacent to coal-fired power plants—documents elevated childhood pulmonary disease, higher frequencies of respiratory illness among children compared to the national average, and increased adult cancer incidence among local residents. These accounts illustrate vividly how environmental degradation is experienced as illness, anxiety, and diminished quality of life at the household and community level, corroborating the epidemiological trends identified in aggregate data.

Water pollution represents a further environmental-health challenge. The World Bank's (2018) Water Security Outlook reports that all major river basins in Kosovo are moderately or heavily polluted, with untreated municipal and industrial wastewater identified as the principal sources of contamination. Agricultural runoff, poor manure management, neglected sewer systems, and legacy industrial pollution intensify the problem. Heavy metal exposure through contaminated groundwater and private wells poses an additional risk, particularly in areas affected by historical industrial activity. Water contamination and poor hygiene are estimated to contribute to approximately 13 annual deaths among children under five in Kosovo (World Bank, 2018). The absence of adequate wastewater treatment infrastructure represents both an environmental and a circular economy failure, as nutrients, water, and organic resources that could be recovered and reused are instead discharged into river systems.

Taken together, these patterns reveal that Kosovo's environmental challenges are deeply interconnected. Waste, energy, water, housing, transport, and public health are not separate sectors but overlapping systems of exposure and vulnerability. This interconnectedness is precisely why circular economy and green growth approaches are especially relevant: they offer a framework for redesigning these systems around prevention, efficiency, cleaner technologies, and social resilience (World Bank, 2019; MMPHI, 2023).

3. METHODS

This study adopts a mixed-methods policy analysis grounded primarily in secondary evidence. The methodological approach combines: (1) analysis of official environmental statistics and institutional reports on waste, air pollution, water security, and household energy; (2) review of strategic and regulatory documents shaping Kosovo's circular economy and green growth agenda; and (3) synthesis of stakeholder perspectives documented in roadmaps, development reports, and regional assessments. This design is appropriate for evaluating how circular economy and green growth frameworks are being translated into practice and how these developments relate to public health risks and opportunities (KEPA, 2024; Eionet, 2024).

The core document set comprises: (a) the KEPA (2024) municipal waste management report for 2023–2024; (b) the World Bank's (2019) report on air pollution management in Kosovo; (c) the World Bank's (2018) Water Security Outlook for Kosovo; (d) the MMPHI (2023) Circular Economy Roadmap;

(e) the Eionet (2024) circular economy country profile for Kosovo; (f) the EEA's (2024, 2025) burden of disease and country fact sheet publications; (g) the OECD (2025) Economic Convergence Scoreboard for the Western Balkans; and (h) the WHO's (2024) household air pollution assessment for Kosovo. These sources were selected because they provide complementary evidence on environmental conditions, health impacts, institutional readiness, and reform directions.

Analytically, the paper employs a thematic framework organised around four questions: (1) what environmental pressures associated with the linear economy are most salient in Kosovo; (2) how these pressures affect public health; (3) what policy and institutional mechanisms currently support circular economy and green growth; and (4) what reforms are required to translate environmental commitments into measurable health gains. The analysis is interpretive and policy-oriented rather than econometric; its purpose is to develop an integrated assessment suitable for academic discussion and policy dialogue.

A limitation of this approach is that it relies on the quality and completeness of existing institutional evidence. Kosovo still faces data gaps in continuous water quality monitoring, municipal-level circular material flow tracking, and health-environment attribution studies. Nonetheless, triangulating official reports, international assessments, and documented community-level observations allows for a robust diagnosis of the environmental-health nexus and the policy directions required for transition (World Bank, 2018; Eionet, 2024).

4. FINDINGS AND DISCUSSION

4.1 Waste Management: The Central Bottleneck of Circular Transition

The evidence strongly suggests that waste management remains the most immediate operational bottleneck in Kosovo's transition from a linear to a circular system. Although waste is collected in

significant quantities—471,278 tonnes in 2023 alone—the system remains disposal-oriented rather than recovery-oriented. With an estimated recycling rate of 2.5%, Kosovo recovers a negligible fraction of its material stream (OECD, 2025). The persistence of landfill dependency demonstrates that Kosovo has not yet established the infrastructure, market mechanisms, or household-level practices necessary for meaningful circularity (KEPA, 2024).

The problem is not merely technical but systemic. Landfills lacking leachate treatment, gas management, and proper site control create environmental and health risks well beyond simple disposal inefficiency. Where waste is not separated at source, recyclable and organic fractions become contaminated, increasing treatment costs and reducing recovery value. Where secondary materials markets remain weak, municipalities and firms have little incentive to invest in sorting and collection systems. In this sense, Kosovo's waste challenge reflects a failed circular chain: households do not separate, municipalities do not systematically sort, infrastructure does not adequately process, and markets do not effectively absorb secondary materials (KEPA, 2024; Eionet, 2024).

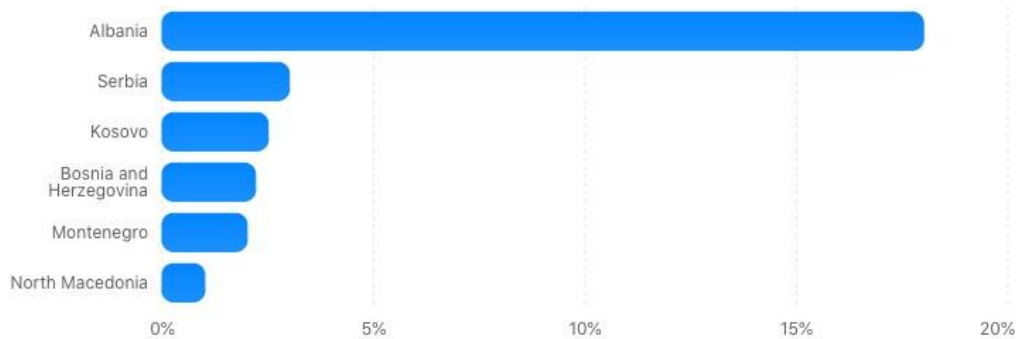
A regional comparison reinforces this diagnosis. The OECD's (2025) Economic Convergence Scoreboard for the Western Balkans confirms that recycling rates across the region cluster between 2% and 3%, reflecting shared structural constraints: weak extended producer responsibility systems, limited green procurement, underdeveloped secondary materials markets, and inadequate waste infrastructure investment. Kosovo's performance at 2.5% positions it within this regional band but below the 10–20% rates characteristic of new EU member states in Central and Eastern Europe, which themselves remain far below EU-27 averages. This regional perspective is important because it situates Kosovo's challenge within a broader development trajectory and highlights the availability of tested policy models from neighbouring EU accession states.

From a health perspective, this matters because poor waste governance creates multiple exposure pathways. Uncontrolled waste decomposition may contaminate soil and groundwater; inadequate landfill conditions elevate fire and emission risks; and poor management of construction, medical, or animal waste can expose communities to hazardous substances. A circular economy approach would systematically address these risks through waste prevention, source separation, composting, material recovery facilities, extended producer responsibility systems, and more formalised secondary materials markets (KEPA, 2024; Eionet, 2024).

Figure 1. *Estimated municipal waste recycling rates in Western Balkan countries. OECD 2025 data indicate extremely low recycling performance across most economies in the region, with Albania representing a notable outlier*

Recycling Rates Across Western Balkans Countries

Estimated municipal waste recycling rates (%) in selected Western Balkan economies based on OECD 2025 regional data and associated regional estimates.



Source: OECD Economic Convergence Scoreboard for the Western Balkans 2025; supplementary regional estimates for Albania, Montenegro, and North Macedonia.

As illustrated in Figure 1, municipal waste recycling rates across the Western Balkans reveal stark disparities and underscore a critical bottleneck in the region's overall green transition. According to data from the OECD and other data, Albania exhibits the highest recycling rate among the monitored nations at 18.0%. In contrast, the remaining countries lag significantly behind in the single digits: Serbia reports a recycling rate of 3.0%, followed by Kosovo at 2.5%, Bosnia and Herzegovina (BiH) at 2.2%, Montenegro at 2.0%, and North Macedonia at 1.0%. While Albania's figures (Lluri, L., & Lluri, F., 2025) show notable progress, the rest of the region stands in stark contrast to the European Union average municipal recycling rate, which exceeds 47%. This widespread underperformance emphasizes the urgent need for institutional reforms, enhanced waste-sorting infrastructure, and robust circular economy fiscal instruments across the Western Balkans.

4.2 Air Pollution and the Public Health Imperative

If waste management is the operational bottleneck, air pollution is the most immediate public health emergency linking circularity and green growth in Kosovo. The EEA's (2024) updated burden of disease assessment confirms that Kosovo and North Macedonia record the highest relative PM_{2.5} mortality burdens in Europe—a finding that places environmental quality directly at the centre of Kosovo's development challenge. The EEA (2025) country fact sheet estimates approximately 2,135 attributable premature deaths in Kosovo in 2023, a figure that dwarfs the health burden associated with most other risk factors in the country. Residential solid fuel use is identified as the largest single source of exposure, with additional contributions from energy production (particularly lignite combustion), industry, transport, agriculture, and waste burning (World Bank, 2019).

Green growth provides the energy transition logic needed to address this burden. Cleaner household heating, district heating expansion, energy efficiency improvements, renewable energy deployment, and lower-emission transport can all reduce particulate exposure. Circular economy principles reinforce these

measures by supporting resource-efficient housing renovation, better construction materials, sustainable product design, and reduced waste burning. The health gains from such an integrated approach would likely be substantial: the same interventions that reduce fossil and biomass combustion also lower cardiopulmonary disease risk and improve winter air quality in urban areas (WHO, 2024; World Bank, 2019).

The evidence on children and future generations is particularly compelling. UNICEF's (2024) field-based reporting from Obiliq shows how communities living near power plants experience air pollution not as an abstract statistical indicator but as repeated doctor visits, chronic coughing, pulmonary disease, developmental concerns, and caregiver stress. This reinforces the importance of framing circular economy and green growth not only as environmental reform agendas but as child health and social equity imperatives.

4.3 Water Security, Wastewater, and Hidden Exposure

Water pollution is often less visible than air pollution, but it is equally important to a healthier Kosovo. The World Bank's (2018) finding that all major river basins are moderately or heavily polluted is highly significant because it indicates systemic rather than localised contamination. Untreated municipal and industrial wastewater, agricultural runoff, and deficient sewerage maintenance undermine both ecological quality and human safety. Where wastewater treatment is inadequate, the circular economy also loses a core principle: the recovery and responsible management of nutrients, water, and organic resources.

The health consequences are serious and frequently underestimated in policy discourse. Contaminated groundwater and private wells may expose residents to heavy metals; microbiological pollution contributes to diarrheal disease; and children face disproportionate risk from both pathogenic and chemical contamination. The estimated 13 annual under-five deaths attributable to water contamination and poor hygiene underscore that environmental infrastructure is inseparable from preventive health policy (World Bank, 2018). Circular economy measures in water management—wastewater treatment expansion, sludge recovery, nutrient recycling, industrial effluent control, and contamination prevention at source—should therefore be integrated explicitly into Kosovo's public health planning framework.

4.4 Emerging Policy Architecture and Implementation Gaps

Kosovo is not starting from zero in circular economy governance. The policy framework is gradually taking shape through the Circular Economy Roadmap (2023), the Kosovo Integrated Waste Management Strategy, packaging and packaging waste regulation, the construction and demolition waste plan, and supporting climate and business model guidance. The Circular Economy Roadmap identifies six priority sectoral areas—food systems, forest systems, manufacturing, the built environment, the creative sector, and retail—and seven cross-cutting enablers including waste management, water management, energy,

transport, digitalisation and ICT, green public procurement, and education (MMPHI, 2023). This is an important institutional development because it recognises circular transition as economy-wide rather than confined to the waste sector alone.

At the same time, implementation remains the principal weakness. The Eionet (2024) country profile identifies a lack of infrastructure and technological capabilities, financing barriers, limited green business knowledge among small and medium-sized enterprises, and the absence of any municipality

that has yet fully embraced a circular economy system. The ECFR (2025) similarly notes that Kosovo's progress on circular economy under the Green Agenda for the Western Balkans is insufficient to meet agreed targets on current timelines, and that this carries risks for the EU accession trajectory. The RECONOMY programme (2024) has sought to address this by working directly with chambers of commerce to support SME-level circular transformation, recognising that policy frameworks alone cannot drive systemic change without enterprise-level adoption.

A key insight from the Kosovo case is therefore that policy adoption alone does not generate circular outcomes. Roadmaps and strategies are necessary but insufficient preconditions. Without financing, municipal implementation capacity, public participation, monitoring systems, and effective enforcement, circular economy language risks remaining aspirational. The transition will succeed only if policy instruments are matched by infrastructure investments and institutions capable of sustained implementation (KEPA, 2024; Eionet, 2024).

4.5 Kosovo in Regional Perspective

Situating Kosovo within the Western Balkans context reveals both shared constraints and specific vulnerabilities. All six Western Balkan economies have committed to the Green Agenda for the Western Balkans (2020) and have, to varying degrees, developed circular economy strategies or roadmaps. However, OECD (2025) data reveal that recycling rates cluster at 2–3% across the region, indicating that structural barriers—rather than country-specific governance failures alone—are limiting progress. These structural barriers include: underdeveloped secondary materials markets with limited demand for recovered materials; weak extended producer responsibility frameworks; insufficient public investment in sorting and recycling infrastructure; and low consumer awareness and behavioural readiness for source separation.

Kosovo's specific vulnerabilities within this regional context include its continued reliance on lignite-based electricity generation, which distinguishes it from some neighbours that have progressed further on energy transition; its status as one of the youngest states in the region, which brings institutional capacity constraints; and its particularly high relative air pollution mortality burden as confirmed by EEA (2024). At the same time, Kosovo's Circular Economy Roadmap (MMPHI, 2023) is among the more developed strategic documents in the region, providing a platform for implementation if supported by adequate

financing and governance reinforcement. The EU4Green programme and UNDP (2023) support mechanisms offer external technical and financial assistance that Kosovo should maximise to close the gap between strategy and practice.

5. CIRCULAR ECONOMY AND GREEN GROWTH AS A PUBLIC HEALTH STRATEGY

A central contribution of this paper is the argument that circular economy and green growth should be repositioned in Kosovo as an explicit public health strategy, not merely an environmental modernisation agenda. Too often, waste, energy, and water policies are developed in administrative silos, while public health systems remain focused on curative treatment rather than upstream environmental prevention. Yet the evidence reviewed here shows that many of Kosovo's most significant disease burdens are environmentally mediated: cleaner materials management, cleaner household heating, better wastewater treatment, and reduced pollutant exposure would all reduce the need for downstream medical intervention (World Bank, 2019; World Bank, 2018).

This suggests the need for a 'health-in-all-circular-policies' approach, modelled on the broader 'health in all policies' framework endorsed by the WHO. Under such an approach, environmental reforms would be assessed not only by recycling rates, emissions indicators, or compliance metrics, but also by their effects on respiratory health, child well-being, exposure reduction, and quality of life. Public health agencies should be involved in designing local waste and air quality plans, while municipalities should routinely assess the health co-benefits of environmental investments. This is consistent with WHO (2024) recommendations to strengthen public health monitoring capacity, integrate health-risk assessments into air pollution policy, and expand community-level awareness programmes related to environmental exposure.

Circular economy and green growth also offer a social inclusion opportunity that is particularly relevant for Kosovo's economic development context. New green jobs in sorting, repair, remanufacturing, recycling services, sustainable construction, environmental monitoring, and cleaner energy can create productive employment while simultaneously improving environmental performance. Kosovo's Circular Economy Roadmap explicitly links circular transition to resilience, competitiveness, and green job creation (MMPHI, 2023). People in Need (2023) further emphasises that prioritising recycling and reuse can reduce dependence on imported resources, enhance domestic material sustainability, and contribute directly to a healthier environment. In a country facing significant development pressures and labour market challenges, the combination of health, environmental, and employment co-benefits from circular transition is especially valuable.

6. POLICY RECOMMENDATION

The evidence reviewed in this paper supports a set of integrated, priority-ordered recommendations for aligning circular economy and green growth with public health in Kosovo. These are summarised in Table 1 and elaborated below.

Table 1. Priority reform pathways for a healthier Kosovo

Priority Area	Key Actions	Health Co-Benefits
1. Waste Governance	Source separation systems; composting for organic waste; improved collection logistics; construction & demolition waste management; informal dump clearance	Reduced soil & groundwater contamination; lower toxic exposure; fewer landfill fires
2. Household Energy Transition	District heating expansion; heat pump subsidies; low-income household support to shift from wood/coal; home insulation & energy efficiency upgrades	Direct PM2.5 reduction; lower cardiopulmonary disease & respiratory illness incidence
3. Wastewater & River Basin Protection	Expanded wastewater treatment capacity; industrial effluent monitoring; integration with spatial planning; nutrient & sludge recovery systems	Reduced waterborne disease; lower heavy metal exposure; improved child health outcomes
4. Education & Public Awareness	Environmental literacy in school curricula; municipal waste sorting campaigns; media engagement;	Behaviour change supporting source separation; improved awareness of health-pollution links
	university-level green skills programmes	
5. Cross-Sector Governance	Joint environment–health indicators; ministerial coordination mechanism; health co-benefit assessment for all major environmental investments	Integrated human development planning; evidence-based resource allocation for prevention
6. SME and Enterprise Circularity	Business support through Chambers of Commerce (RECONOMY model); green public procurement; extended producer responsibility for packaging and electronics	Green job creation; reduced industrial pollution; improved occupational health

The first priority is strengthening waste governance at the municipal level. Kosovo should invest in source separation systems, localised sorting capacity, composting infrastructure for organic waste, and improved collection logistics. Particular attention should be directed at construction and demolition waste, packaging waste, and informal dumping. A nationwide recovery system will not emerge without municipal implementation capacity and reliable, long-term financing (KEPA, 2024; Eionet, 2024).

The second priority is cleaner energy for households and communities. Expanding district heating, supporting heat pump adoption, subsidising low-income households to shift away from wood and coal combustion, and improving home energy efficiency would directly and substantially reduce PM2.5

exposure—the single largest contributor to Kosovo's premature mortality burden. Such measures should be classified and budgeted as preventive health investments rather than purely energy policy (WHO, 2024; EEA, 2025).

The third priority is wastewater and river basin protection. Kosovo urgently needs expanded wastewater treatment capacity, stronger industrial effluent monitoring, and better integration between water management and spatial planning. Because river basin pollution affects both ecosystems and public health, investments in this area carry high social returns that can be quantified through health-economic analysis (World Bank, 2018).

The fourth priority is education and public awareness. The circular transition cannot rely solely on regulation; it requires active social participation and behavioural change. Schools, municipalities, universities, and media institutions should promote environmental literacy, waste sorting habits, cleaner consumption patterns, and awareness of the health consequences of pollution. The Circular Economy Roadmap explicitly recognises education as a horizontal enabler of circular transition (MMPHI, 2023); this recognition must be operationalised through curriculum reform, teacher training, and local awareness campaigns.

The fifth priority is strengthened cross-sector coordination. Ministries responsible for environment, health, economy, education, local government, and infrastructure should jointly develop indicator frameworks that track not only recycling rates and emissions, but also exposure reduction and health co-benefits. This would shift Kosovo's environmental governance from fragmented compliance reporting toward integrated human development planning (WHO, 2024; Eionet, 2024).

The sixth priority is enterprise-level circular economy adoption. Drawing on the RECONOMY (2024) model of engaging Chambers of Commerce to support SME-level circular transformation, Kosovo should combine regulatory instruments—extended producer responsibility for packaging and electronics, green public procurement requirements—with targeted business support, access to finance, and green skills development. This enterprise dimension is essential for driving circular economy beyond government strategy documents into the actual production and consumption economy.

CONCLUSION

Kosovo's path toward a healthier and more prosperous future runs through environmental transformation. The evidence reviewed in this paper demonstrates that the country's current linear economic model produces large waste volumes, a recycling rate of only 2.5%, persistent landfill dependence, severe air pollution responsible for an estimated 2,135 premature deaths per year, and widespread water contamination affecting all major river basins (KEPA, 2024; EEA, 2025; OECD, 2025; World Bank, 2018). These environmental failures are not merely ecological inefficiencies; they are public

health risks expressed in respiratory disease, toxic exposure, impaired child development, and avoidable mortality.

Circular economy and green growth provide Kosovo with a coherent and evidence-based strategic response. The circular economy addresses waste prevention, material efficiency, reuse, and recovery; green growth broadens this into a model of cleaner energy, resilient infrastructure, innovation, and sustainable competitiveness. Kosovo has already begun to articulate this transition through its Circular Economy Roadmap and related policy instruments (MMPHI, 2023). However, the real challenge lies in implementation: building infrastructure, enforcing regulation, mobilising finance, improving municipal capacity, and—critically—integrating health considerations explicitly into environmental decision-making.

In regional context, Kosovo's challenge is shared but acute. All Western Balkan economies are transitioning from linear systems with recycling rates in the 2–3% range, but Kosovo's particular combination of lignite dependence, institutional capacity constraints, and high relative pollution mortality requires prioritised and sustained action (OECD, 2025; ECFR, 2025). The EU4Green programme, UNDP support mechanisms, and RECONOMY enterprise engagement initiatives provide external levers that Kosovo should exploit to accelerate implementation of its already-adopted policy commitments.

The overarching lesson of this analysis is that environmental policy in Kosovo should no longer be treated as peripheral to social welfare. It is foundational to public health, human dignity, and long-term development. Embedding circular economy and green growth principles across waste, energy, water, education, and public health systems would reduce pollution exposure, create greener employment, strengthen community resilience, and move Kosovo decisively toward a healthier and more sustainable society—for this generation and those that follow.

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ADVANCING TOWARDS A CIRCULAR ECONOMY – INSIGHTS FROM VIETNAMESE ENTERPRISES

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Abstract

From a positive perspective, Industry 4.0 enables companies to create high-quality products, improving the standard of living. However, negatively speaking, Industry 4.0 also results in detrimental consequences on society and the natural environment. Therefore, businesses are increasingly considering the circular economy as a guiding principle and a major priority so as to progress towards sustainable development and balance the interests of the economy, society, and the environment. Globally, the transition from a linear to a circular economy has emerged as an inevitable global development trend, offering considerable advantages for both enterprises and governments in achieving sustainable production and consumption. This shift offers Vietnam a valuable chance to develop and grow further. Using a qualitative research approach, combining with the application of observation, analysis, and dialectical materialism, the study 'Advancing Towards a Circular Economy: Insights from Vietnamese Enterprises' aims to offer Vietnamese companies practical solutions and strategic directions so as to enhance their business operations and production, thereby contributing to sustainable economic growth.

Keywords: Circular Economy, Sustainable Development, Vietnamese Enterprises.

1. PROBLEM STATEMENT

In the current context, the circular economy is becoming increasingly recognized as a vital economic model to address environmental pollution and climate change issues, with an eye toward an ultimate goal of sustainable economic growth for all countries, including Vietnam. In addition to economic potential and benefits, the shift to sustainable production and consumption presents numerous obstacles for Vietnamese firms, such as barriers related to policy, technology, and consciousness. However, this is an important responsibility for Vietnamese companies to to prioritize and implement in order to follow the global trend toward sustainable economic development. The vision of Vietnam's Socio-Economic Development Strategy (2021–2030) is to "build a green economy, a circular economy, and an environmentally friendly economy" and "encourage the development of the circular economy model to comprehensively and efficiently utilize the outputs of the production process." According to this objective, Vietnamese enterprises are encouraged to make a transition toward a circular economy that complies with international sustainability standards and follows global trends.

2. RESEARCH METHODS

Using a qualitative research approach, this research paper ‘Advancing Toward a Circular Economy: Insights from Vietnamese Enterprises’ was conducted to clarify the current situation of the circular economy development in Vietnam. Through analytical techniques, the research investigates the degree to which the concepts of the circular economy are being applied in a variety of industries, such as construction, consuming, industrial, and agricultural.

Additionally, the synthesis method is used to incorporate secondary data and information from various sources, including legal documents, policy reports, academic literature, and global best practices. With this approach, a comprehensive and multifaceted picture of the current situation of the circular economy and its emerging trends among Vietnamese companies can be constructed. By logically and systematically connecting fragmented information, it becomes more effective and easier to identify the advantages, such as proactive government policies and the involvement of large businesses, as well as the difficulties encountered by small and medium-sized enterprises (SMEs) in Vietnam, including scarce resources, technological constraints, undeveloped legal system, and low public awareness.

Furthermore, the comparative technique is applied to analyze models or phenomena so as to find similarities and differences and draw lesson learned. In this research, the comparative method is used to compare Vietnam’s policies and implementation practices with those of other nations, as well as across industries, regions, and business sizes in the same context.

By combining these three techniques, the study not only reflects the complexity of the problems but also provides a solid scientific foundation for proposing strategic solutions aligned with Vietnam's practical circumstances. Therefore, this encourages sustainable development and global integration using the circular economy model.

3. OVERVIEW OF CIRCULAR ECONOMY

There are many different understandings of the circular economy.

According to Pearce & Turner (1990), the circular economy is an economic model built on the basic principle 'everything is an input to something else'.

According to The United Nations Industrial Development Organization (UNIDO), the circular economy refers to an alternative to the conventional linear economic model. The production process is closed-loop where trash is recycled and becomes raw materials for new products. By doing that, resources will be used for as long as possible, while obtaining the maximum value possible, eventually assisting in the reduction of negative impacts on the environment, ecosystems, and human well-being.

According to Ellen MacArthur Foundation (2012), the circular economy is a system in which products never end up as waste and nature is regenerated. In a circular economy, products and materials circulate through operations, including maintenance, reuse, refurbishment, remanufacturing, and recycling. Furthermore, in order to addresses climate change and other global issues such as pollution, waste, biodiversity loss, the circular economy separates economic activity from the use of limited resources.

As a result, the fundamental economic model is currently the circular economy. Regarding businesses, adopting a circular economy is constantly prioritized on sustainable development. Specifically, it makes great contributions in raw material optimization, lowering the use of virgin resources, increasing the use of recycled materials, cost reduction, environmental pollution reduction, and minimizing price fluctuations and supply chain risks. In turn, this boosts innovation by displacing products and increasing value for businesses. By doing this, enterprises will gain flexibility and creativity. Moreover, the circular economy provides companies with new economic opportunities by developing new services, remanufacturing parts and components, and creating value-added services such as reverse logistics for collection, recycling assistance, marketing, and sales. In terms of nations, the circular economy helps to contribute to conserve their natural resources and minimize the environment influences. Therefore, applying a circular economy can be regarded as one of the most essential methods to achieve a sustainable economy.

4. THE CURRENT SITUATION OF VIETNAMESE BUSINESSES' CAPABILITIES IN THE CIRCULAR ECONOMY

Currently, many Vietnamese enterprises are promoting eco-friendly products and services in response to climate change by applying the circular business models for sustainable development, with the support from the government and state. In Vietnam, numerous companies and industrial models have been successfully adapted to the circular economy. Notable instances in the private sector include the eco-industrial park models in Ninh Binh Province, Can Tho City, and Da Nang City, which have saved millions of USD annually. Furthermore, in order to ensure the long-term growth of their businesses, many corporations such as Vinamilk, Nestlé Vietnam, Coca-Cola, Lagom Vietnam, and Duc Giang Chemicals JSC, have applied circular business models. These initiatives contribute to the broader objective of sustainable economic growth, showing that Vietnamese companies are becoming more conscious of and committed to their social duties.

In particular, foreign direct investment (FDI) have implemented cutting-edged, tightly regulated waste treatment techniques to recycle waste and byproducts. Therefore, this has encouraged the formation of packaging recycling alliances. One prominent example of an FDI business putting waste recycling plans into practice is Nestlé, which uses milk carton waste to make eco-roofing sheets, produces fertilizer by using non-hazardous sludge, and uses non-incinerated boiler ash to produce bricks. Additionally, by 2025, Nestlé has also planned to recycle and reuse 100% of its product packaging. Moreover, for instances, in addition to utilizing carbon-free fuels and thermal energy from renewable sources, Heineken Vietnam has been recycled and reused up to 99% of its trash or by-products. Similarly, Unilever Vietnam has carried out initiatives to collect and recycle plastic packaging and to sort garbage at the source. Vietnamese businesses are implementing circular economy practices. For example, by using biogas waste treatment, trash is turned into recycled materials to serve the operations of Vinamilk's daily farms. Furthermore, in the textile sector, a model of recycling fabric scraps into new fabrics has been implemented the Vietnam National Textile and Garment Group (Vinatex). Products which are made from this recycled material are labeled with the CE mark. In the construction industry, enterprises have taken steps to adopt measures to employ more recycled and non-fired building materials. This has allowed for the evaluation of the life cycle of building projects and promoted the growth of a market niche focused on environmentally friendly building materials. It not only successfully addresses the problems of material intensity in building but also fosters resource innovation. Not limited to that, waste incineration technology has been applied by Hà Tiên Cement to use trash as a fuel alternative for coal, minimizing production cost and CO2 emissions. In the plastics sector, Bình Minh Plastics has led the industry in using recycled plastic to make pipes and packaging, followed by a 20% reduction in the use of virgin plastic materials and a yearly savings of billions of VND. Last but not least, The Vietnam Plastics Association (VPA) claims that Vietnam's current plastic

recycling rate is approximately 33%, which is less than the international average of 45%, suggesting that there remains considerable potential for the country to develop a circular economy.

Notwithstanding the achievements mentioned above, Vietnam continues to face certain obstacles in its implementation of the circular economy and circular business models. In spite of the introduction of these models, their adoption is still inconsistent among companies, primarily due to variations in market conditions, technology, resources, and awareness. Even though the circular economy requires long-term value generation strategies, in reality, many enterprises adopt circular practices in a spontaneous manner, frequently aiming for short-term value. Furthermore, there remains limitations in the legal framework and related policies as well as lacking clear and consistent restrictions. Differ from the circular economy's principles, the majority of existing legal structures are still based on the philosophy of the conventional linear business models. Additionally, circular economy practices are still not widely emphasized in consumer habits. Therefore, the infrastructure required to develop a circular economy is still insufficient and inconsistent, making it extremely challenging to adopt new business models.

5. OPPORTUNITIES AND CHALLENGES FOR VIETNAMESE BUSINESSES IN A CIRCULAR ECONOMY

To accelerate the shift to a circular economy, Vietnam's Ministry of Natural Resources and Environment has encouraged the development of the Environmental Protection Law. This law lays out explicit institutional frameworks, provisions, and most importantly, the duties of producers and distributors in terms of collecting, sorting, and recycling waste, such as policies on waste treatment expenses. Moreover, so as to promote the development of the environmental industry and the expansion of markets for waste and byproducts exchange, various preferential mechanisms and policies that allow waste and discarded materials to become recycled materials in closed-loop production processes are carried out by the Ministry. Crucially, the Ministry has also released criteria for using products manufactured from recycled inputs.

In order to turn these initiatives into reality, the Ministry of Natural Resources and Environment goes on encouraging collaborative partnerships to support businesses to obtain the financial and technological resources needed to adopt circular economy practices. It not only promotes citizens to take part in circular economy activities including sorting waste and using less plastic bag, but also educating public about corporate social responsibility. Furthermore, it encourages transitions in consumer behavior toward eco-friendly products for a sustainable future.

Thanks to these initiatives, it is anticipated that enterprises will have more opportunities to apply circular business models in the near future. The government is going to enhance the legal and policy structure by enforcing regulations, technical standards, and environmental guidelines targeted at creating a circular economy in alignment with new regional and international trends. The objectives of these activities is to maximize the use of recyclable waste and minimize the exploitation of natural resources.

Additionally, businesses can adopt circular economy practices by engaging in the development of sustainable business and production strategies, as well as enhancing their capacity to use circular business models that match business and production activities with environmental protection goals.

In addition, companies will have more opportunities as the government plays a guiding and directive role in promoting a circular economy database in alignment with the trend of digital economic transformation. In order to provide assistance to the development of a circular economy in Vietnam, the government is supporting partnerships and cooperation among various business sectors and social organizations.

Public awareness activities that highlight the advantages of the circular economy were organized so as to change consumer attitudes toward consuming eco-friendly products or those marked with CE certification. As a result, enterprises have an opportunity and incentive to apply the circular business models. Particularly, if the general population is more conscious about the significance of waste separation at the source, trash management and recycling expenses can be considerably minimized.

In addition to awareness efforts, it is vital to incorporate basic knowledge related to the circular economy into training and educational activities. By doing this, it not only helps to raise awareness but also create ideal conditions for establishing a workforce that can operate circular business models associated with high-tech applications and innovation. This can be considered as a chance for companies to get high-quality resources that satisfy the needs of international trend.

Therefore, in order to take advantages of these chances, businesses not only have to define technical standards and specifications, but also need to always implement new business models that are associated with the international development trend while adopting a circular economy mindset.

On the other hand, alongside these advantages, the circular economy poses considerable difficulties for businesses, especially for the small and medium-sized enterprises (SMEs), making up for most Vietnamese businesses. In 2023, about 800.000 of the approximately 921.372 active businesses were small and medium-sized enterprises. Furthermore, in December 31, 2024, it can be seen that approximately 940.078 companies were in operation, with small and medium-sized enterprises accounting for over 98% of all businesses.

The high initial investment expense is considered to be one of the major challenges. According to the report titled "Developing the Circular Economy in Vietnam's Industrial Sector" in 2023 by the Ministry of Industry and Trade, more than 70% of Vietnam small and medium-sized enterprises (SMEs) face financial constraints to transition toward a circular economy model. In order to adopt circular business models, companies have to invest in recycling technologies, modernize manufacturing lines, and enhance waste management systems. Therefore, businesses must adopt long-term manufacturing and product usage strategies and factor in the expense of recovering value from waste. To comply with the circular economy,

business must invest significantly in technologies for collection, sorting, and recycling so as to reintegrate resources into production. However, the original design phase presents significant obstacles as it demands knowledgeable professionals with both technical and design capabilities. Currently, Vietnam does not have enough formal training in designing circular economy models, and the majority of projects are the outcomes of spontaneous initiatives of individual enterprises.

In addition, it can be seen that one of the major challenges is the absence of supportive regulations and incentive programs. Currently, Vietnam lacks a comprehensive policy framework to promote the circular economy. In particular, there are no policies on tax incentives, financial assistance programs, or regulations to motivate companies to shift to applying circular business models. In 2022, according to the Central Institute for Economic Management (CIEM), the lack of supportive regulations resulted in problems for 65% of businesses.

Moreover, many Vietnamese enterprises go on employ outdated production technologies that require a lot of raw materials and emit considerable greenhouse gases. According to the survey “The State and Outlook of the Circular Economy in Southeast Asia” in 2023 by the Asian Development Bank (ADB), just 30% of domestic manufacturing enterprises apply environmentally friendly technologies. As a result, this draws attention to a main difficulty regarding technology and infrastructure that Vietnamese enterprises have to encounter.

Last but not least, it is noteworthy that Vietnamese companies still lack sufficient knowledge and expertise about the circular economy. Many businesses still do not have a thorough understanding of the advantages and implementation strategies of the circular economy. According to the survey “Awareness and Application of the Circular Economy in Small and Medium-Sized Enterprises in Vietnam” in 2022 by the Vietnam Association of Small and Medium Enterprises (VINASME), more than half of enterprises are uncertain about the benefits and how to apply circular economy practices.

In light of the circular economy, the information mentioned above highlights the opportunities and challenges that Vietnamese companies have to face. If businesses are aware of these opportunities and difficulties, business leaders will be able to develop better development strategies in alignment with global trends.

CONCLUSION

In addition to various economic advantages, the circular economy shows noteworthy difficulties for Vietnamese enterprises when putting it into practice. In order to make this model successful, the joint efforts of the government, businesses, and the community are needed. Key factors such as enhancing regulations, making technological investments, raising public awareness, and building a strong support system are necessary to help Vietnamese businesses to achieve sustainable development as well as take advantage of significant potential to boost their international competitiveness.

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CIRCULAR ECONOMY AND THE IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT GOALS IN VIETNAM

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Abstract

In the context of increasing environmental pressures and growing resource scarcity, the circular economy has gradually emerged as a pathway toward sustainable development. By promoting efficient resource use, waste reduction, recycling, and sustainable production and consumption, the circular economy enhances economic efficiency, supports environmental protection, and improves social well-being, while directly contributing to several Sustainable Development Goals (SDGs). In Vietnam, circular economy principles have gradually been integrated into national policies, thereby establishing a legal foundation for the realization of sustainable development goals. However, Vietnam still faces numerous challenges that affect the process of developing a circular economy model. This paper analyzes the theoretical foundations and the role of the circular economy in promoting the implementation of SDGs. It also identifies key opportunities and challenges and proposes solutions to support the development of the circular economy toward achieving sustainable development goals.

Keyword: Circular Economy; Sustainable Development Goals (SDGs); Green Growth; Resource Efficiency; Vietnam.

1. THEORETICAL FOUNDATION

The circular economy has relatively early intellectual origins, with its initial precursors emerging in agriculture in the mid-eighteenth century. However, it was not until the late twentieth century that the circular economy was fully conceptualized as an economic category, referring to a development model fundamentally different from the traditional linear economy, which operates according to the logic of “extract - produce - consume - dispose.” In this process, Pearce and Turner (1990) are widely regarded as the first scholars to employ the concept systematically in their work *Economics of Natural Resources and the Environment*. According to these authors, the circular economy is grounded in the core principle that every output of one process can become an input for another, thereby opening a new approach to resources, waste, and economic growth (Pearce & Turner, 1990). According to the Ellen MacArthur Foundation, “Circular Economy is restorative and regenerative by design. It replaces the ‘end-of-life’ concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models” (Ellen MacArthur Foundation, 2012, p. 7). Thus, the circular economy is operationalized through a system of core principles, foremost among them the 3Rs (reduce - reuse - recycle), while also being extended through requirements to prolong product lifespans and optimize resource use across the entire economic cycle.

Sustainable development is a theoretical category that reflects the imperative requirements of development under modern conditions, where ecological limits and global social problems are becoming increasingly evident. According to the World Commission on Environment and Development, now widely known as the Brundtland Commission, sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987). In Vietnam, this principle was also institutionalized in Article 3 of the 2014 Law on Environmental Protection, which states that “sustainable development is development that meets the needs of the present generation without undermining the ability of future generations to meet those needs, on the basis of a close and harmonious combination of economic growth, social progress, and environmental protection.” In 2015, the United Nations adopted the 2030 Agenda for Sustainable Development, which established the 17 SDGs as a global framework for development (UN, 2015). These goals include: 1-No Poverty; 2-Zero Hunger; 3-Good Health and Well-Being; 4-Quality Education; 5-Gender Equality; 6-Clean Water and Sanitation; 7-Affordable and Clean Energy; 8-Decent Work and Economic Growth; 9-Industry, Innovation and Infrastructure; 10-Reduced Inequalities; 11-Sustainable Cities and Communities; 12-Responsible Consumption and Production; 13-Climate Action; 14-Life Below Water; 15-Life on Land; 16-Peace, Justice and Strong Institutions; and 17-Partnerships for the Goals. Since 2015, these goals have served as guiding principles for national development across the world.

2. RESEARCH METHODOLOGY

This study employs a qualitative research approach, drawing on secondary data from multiple sources, including academic publications, thematic articles, relevant media materials, and the system of government policy documents on sustainable development and the circular economy. By combining document analysis and synthesis methods, the paper aims to clarify key theoretical issues, as well as the opportunities and challenges arising in the development of the circular economy in Vietnam. On that basis, the study proposes several policy recommendations aligned with Vietnam's development context and its practical transition pathway.

3. THE ROLE OF THE CIRCULAR ECONOMY IN ACHIEVING THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

The circular economy and the SDGs are aligned not only in their goals but also in their underlying logic, as both seek to integrate economic, social, and environmental development. As Korhonen et al. (2018) argue, the circular economy plays an important role in mobilizing businesses and policymakers in the pursuit of sustainable development. In this sense, it is increasingly emerging as a development framework capable of linking economic value with social and environmental objectives within a coherent operational model. Economically, the circular economy replaces the linear logic of “produce–consume–dispose” with “design–use–recover–regenerate,” where value is created through longer product lifecycles, more efficient material flows, reduced resource losses, and greater knowledge intensity across the production cycle. Lacy and Rutqvist (2015) estimate that the circular economy could generate about USD 4.5 trillion in global economic benefits between 2015 and 2030. In Europe alone, it could bring net annual benefits of around EUR 600 billion, create 580,000 additional jobs, and significantly reduce greenhouse gas emissions (Ellen MacArthur Foundation, 2015). These figures confirm that the circular economy is not merely an environmental option, but an increasingly necessary pathway toward a greener and more sustainable development model (Ellen MacArthur Foundation, 2012).

The circular economy offers a strategic pathway for industrial transformation, innovation, and more resilient infrastructure. Unlike the linear model, which maximizes output while externalizing ecological costs, the circular economy requires industry, innovation, and infrastructure to operate within ecological limits. In this model, industry becomes a space for recovery, reuse, and regenerative production; innovation drives lower resource intensity, fewer emissions, and greater adaptive capacity; and infrastructure supports circular flows of materials, energy, data, and services. As a result, the circular economy strengthens green employment, technological upgrading, infrastructure resilience, and long-term competitiveness, thereby providing an important foundation for advancing SDG 8 and SDG 9.

Building on SDG 8 and SDG 9, the circular economy also directly advances SDG 12 by reorganizing production and consumption toward lower resource extraction, longer product use, greater recovery, and

less waste. In this model, competitiveness no longer depends on cheap resources or low-cost labor, but increasingly on technological capability, efficient resource use, and the expansion of reuse and recycling. In this sense, the circular economy provides a modern and sustainable framework for economic restructuring.

From a social perspective, the circular economy also supports a more inclusive and equitable development path. By promoting sustainable growth and expanding decent work in line with SDG 8, it creates an important foundation for SDG 1 on poverty reduction. This is because lasting poverty reduction depends not only on short-term support, but also on stable livelihoods, broader employment opportunities, and stronger participation in emerging value chains. As repair, reuse, recycling, reverse logistics, and green production expand, workers, especially vulnerable groups, gain more opportunities for employment, income improvement, and greater resilience to socio-economic risks.

Workers benefit not only from higher incomes, but also from greater access to higher value-added segments of emerging value chains. In this respect, the circular economy directly supports SDG 10 by helping informal workers, low-income groups, and other vulnerable populations transition into the formal economy through stronger links with social protection, vocational training, and labor safety policies.

By reducing waste at the design stage, expanding material reuse, and improving control over air, water, and soil pollution, the circular economy also enhances quality of life. In urban areas, it supports more integrated waste management systems, greener transport, safer living environments, and more sustainable public services, thereby reinforcing progress toward SDG 11. Better environmental quality also reduces pollution-related health risks, strengthens public health, and improves resilience to ecological threats, thus contributing directly to SDG 3.

Beyond these economic, social, and environmental effects, the circular economy also reshapes awareness, education, and behavior toward more sustainable patterns of development, thereby supporting SDG 4 on quality education. A circular society requires citizens equipped not only with professional skills, but also with sustainable lifestyles, environmental responsibility, and responsible consumption practices. In this sense, education becomes not merely a channel for knowledge transmission, but a mechanism for preparing learners for the expansion of green industries, clean technologies, and sustainable ways of living.

From a gender equity perspective, the circular economy can also generate positive impacts on SDG 5, particularly given the significant participation of women in recycling activities, community services, green entrepreneurship, and the sharing economy. When supported by appropriate policies—such as access to credit, vocational training, safe working conditions, and market opportunities—the circular economy can become an important space for enhancing women’s economic empowerment, expanding livelihoods, and improving their position in society.

From an environmental perspective, the circular economy reorganizes the material relationship between human beings and nature in a way that preserves the value of materials, energy, and products for as long as possible, rather than maximizing extraction and then discarding them. For this reason, the most immediate impact of this model is reflected in SDG 12, as it transforms the very foundations of production and consumption. Products are designed to be more durable, easier to repair, reuse, and recycle, thereby reducing the extraction of virgin resources, minimizing waste generation, and alleviating ecological pressures on the natural environment.

These shifts in reducing resource extraction and limiting waste generation have also created a direct foundation for the implementation of SDG 13 on climate action. This is because a substantial share of greenhouse gas emissions in the modern economy originates precisely from resource-intensive extraction, production, and consumption activities. When material cycles are reorganized along circular lines, the demand for virgin raw material extraction, transport, and primary production declines, thereby significantly reducing structural sources of emissions. According to the IEA (2019), the circular economy could cut by half the greenhouse gas emissions associated with the use of plastic, steel, and aluminum by 2050. Thus, the circular economy demonstrates that controlling material flows is a prerequisite for controlling emissions, and that the transition embodied in SDG 12 opens the pathway toward the realization of SDG 13.

With regard to SDG 6 on clean water and sanitation, the circular economy contributes to restructuring the management and use of water resources in a more efficient and sustainable manner. By promoting water reuse, the recovery of treated wastewater, the reduction of production losses, and the limitation of pollution caused by uncontrolled discharges, this model not only alleviates pressure on water resources in quantitative terms, but also helps protect water quality and improve environmental sanitation conditions. When solid waste, chemicals, and by-products are managed in a more closed-loop manner, the risk of leakage into rivers, lakes, and groundwater systems is also significantly reduced. Following the same logic, the circular economy also creates an important impetus for the achievement of SDG 7 on affordable and clean energy. As product lifecycles are extended and activities such as reuse, remanufacturing, and recycling are expanded, the demand for virgin materials and for energy-intensive stages of production and transport declines. This not only helps save energy at the scale of the entire economic system, but also strengthens the material foundation for the transition toward clean energy. In a global context where substantial gaps in energy access still persist and the share of renewable energy in total global consumption remains limited (United Nations Statistics Division, 2019), the need to shift toward a more resource- and energy-efficient model has become particularly urgent.

Building on the foundation of material flow control and emission reduction, the circular economy continues to demonstrate clear relevance for SDG 14 and SDG 15. According to UNEP (2021), more than 11 million tonnes of plastic enter the oceans each year, while 19–23 million tonnes of plastic waste leak

into aquatic ecosystems annually. These figures indicate that plastic pollution is no longer merely a waste management issue, but has become a systemic pressure on marine resources, water quality, and the integrity of aquatic ecosystems. Therefore, by reducing waste generation at the source, promoting reuse, recovery, and recycling, and thereby limiting marine pollution and protecting ocean resources, the circular economy plays a particularly important role in advancing SDG 14. Beyond marine ecosystems, the circular economy also carries significant implications for SDG 15 on life on land, particularly in the protection and restoration of terrestrial ecosystems. By reducing dependence on the extraction of virgin resources, the circular model helps alleviate pressure on land, forests, minerals, and biodiversity. Through extending product lifecycles and enhancing reuse, remanufacturing, and recycling, it reduces overall material demand—one of the key drivers of ecosystem degradation. This is especially critical in the current global context, where land degradation, deforestation, and biodiversity loss are intensifying

While the SDGs set out the imperative of rebalancing the relationship between the economy, society, and the environment at the level of development goals, the circular economy provides the practical basis for translating that rebalancing into the very operational structure of the economy itself. By reorganizing flows of materials, energy, and value along circular lines, this model helps reduce extraction intensity, curb emissions, and restore natural resources, while simultaneously sustaining innovation, competitiveness, and long-term social benefits. What is fundamental here is not merely its capacity to address individual development problems in isolation, but its ability to construct a new development logic in which efficiency, equity, and sustainability are integrated within the same operational framework. From this perspective, the circular economy can be understood as a strategic framework for transformation, one that is of particular significance for the realization of the Sustainable Development Goals in the contemporary era.

4. OPPORTUNITIES AND CHALLENGES FOR CIRCULAR ECONOMY DEVELOPMENT IN VIETNAM IN RELATION TO THE SUSTAINABLE DEVELOPMENT GOALS

4.1. Opportunities for the development of the circular economy in Vietnam

From an institutional perspective, the opportunity to promote circular economy development in Vietnam was formed relatively early through major Party orientations and was subsequently translated, step by step, into the legal framework and state action programs. An important milestone was Resolution No. 55-NQ/TW of February 11, 2020, issued by the Politburo on the orientation of Vietnam's National Energy Development Strategy to 2030, with a vision to 2045. Although this resolution did not yet employ the circular economy as a central conceptual framework, it clearly embodied many of the model's core principles by emphasizing the priority development of renewable energy, power plants using waste and residual materials, and the linkage between energy restructuring, environmental protection, and efficient resource use. This may be regarded as the stage in which an initial strategic foundation was formed, when

Vietnam's development thinking began to shift from a growth logic based primarily on input extraction toward one associated with resource efficiency and green transition.

On the basis of that orientation, the 2020 Law on Environmental Protection, which took effect on January 1, 2022, marked a pivotal turning point, as the circular economy no longer appeared merely as a policy spirit but was formally incorporated into the national legal system. The significance of this step is substantial, as it elevated the circular economy from the level of recommendation to that of legal normativity, thereby creating the basis for the State to design regulatory instruments, allocate responsibilities, and organize implementation in practice. This was followed by Decision No. 687/QĐ-TTg of June 7, 2022 of the Prime Minister approving the project on the "Development of the Circular Economy in Vietnam," Decision No. 222/QĐ-TTg of January 23, 2025 on the National Action Plan for the Implementation of the Circular Economy through 2035, the National Green Growth Strategy for 2021–2030, and the National Action Program on Sustainable Production and Consumption for 2021–2030. These documents create a major institutional opportunity for Vietnam to link the circular economy with the Sustainable Development Goals, as they demonstrate that this model is no longer merely a slogan of green reform, but is gradually becoming a component with an increasingly clear place in the architecture of national development.

The Fourth Industrial Revolution has created favorable technological and governance conditions for Vietnam to develop the circular economy more effectively. Technologies such as big data, artificial intelligence, the Internet of Things, and traceability systems improve lifecycle management, reconnect material flows, and strengthen value-chain linkages, thereby enhancing resource efficiency and supporting more sustainable growth. Vietnam's natural conditions also provide a strong foundation for circular development. Its tropical agricultural system generates abundant by-products that can be reused for organic fertilizers, biomass energy, biogas, and other circular models. According to the Biomass Atlas for Vietnam (World Bank, 2018), biomass resources in Vietnam mainly derive from crop residues, wood waste, and livestock waste, thereby creating significant potential to transform "waste" into new inputs for production and energy.

With its long coastline, abundant wind and solar conditions, and rich ecosystems, Vietnam is well positioned to develop wind power, solar energy, and circular economy models linked to the use of marine resources. According to the World Bank (2001), Vietnam is naturally endowed with abundant renewable resources, which constitute an important prerequisite for the circular economy. This is because an economy can only be truly circular when material reproduction increasingly relies on cleaner and lower-emission energy sources. At the same time, the growing pressure of marine pollution—particularly plastic waste—has added a new dimension to these natural advantages: they are not only a source of development potential, but also a driving force pushing Vietnam to reorganize its production and consumption systems toward waste reduction and greater recycling and reuse.

Vietnam is not building circular value chains from a zero base, as circular thinking has long been embedded in household production practices. The traditional garden–pond–livestock model already reflects the core logic of circularity through the reuse of manure, pond water, pond sludge, and agricultural by-products within an integrated farming system. As noted by the World Bank, this model is regarded as a traditional example of the circular economy in Vietnamese agriculture because it helps extend material lifecycles, reduce dependence on external inputs, and improve household-level resource efficiency (Rajalahti, 2021). It is therefore not only a long-standing farming practice, but also an endogenous advantage that provides Vietnam with a practical and social foundation for developing a circular economy suited to its agricultural and rural conditions.

From the perspective of innovation and industrial infrastructure, eco-industrial parks represent a major opportunity for Vietnam to advance the circular economy by translating circular principles into the practical organization of production. Vietnam currently has 90 enterprises implementing 663 resource efficiency and cleaner production solutions across three industrial parks, of which 217 solutions have already been put into practice, generating energy savings, emissions reductions, and economic benefits for participating firms. More importantly, these results show that circular industrial infrastructure can produce measurable economic gains while strengthening enterprise competitiveness. In the broader context of Vietnam’s 411 established industrial parks, including 293 already in operation across 61 provinces and cities, the expansion of the eco-industrial park model could generate substantial spillover effects across the country’s production and export base (UNIDO, 2020). Eco-industrial parks, therefore, are not merely a technical adjustment in industrial environmental management, but a structural opportunity for Vietnam to promote the circular economy in tandem with growth model transformation and sustainable development.

In 2024, Vietnam implemented the Extended Producer Responsibility (EPR) mechanism, requiring major brands to redesign products in ways that facilitate recycling and extend product lifecycles. This has created a new market for repair services, recycling, and product-sharing models. According to a study by IPSARD (2024), the utilization of agricultural by-products—with collection and reuse rates exceeding 52%—has transformed millions of tonnes of waste into biomass energy and organic fertilizers, generating surplus economic value worth billions of US dollars. This represents a crucial opportunity for the circular economy in Vietnam to move beyond the narrow domain of waste treatment and gradually become a new driver of green growth and business model innovation. More notably, in the agricultural sector, the increasingly high rates of by-product collection and reuse are revealing significant potential for converting residues into biomass energy, organic fertilizers, and new forms of value added, thereby turning the “discarded” portion of the economy into a resource for development. At the strategic level, this very transition creates an opportunity for circular economy development in Vietnam not only to improve resource-use efficiency and increase economic value, but also to help domestic production adapt more effectively to green

standards and new technical barriers in international trade, thereby strengthening the position of Vietnamese goods in global value chains.

Alongside institutional, technological, and production-infrastructure opportunities, Vietnam also possesses a notable social advantage: the existence of an informal workforce that has long been deeply involved in the collection, sorting, and recirculation of materials, thereby constituting an important endogenous resource for circular economy development. According to UNDP (2022), the informal sector plays a significant role in Vietnam’s recycling value chain, with more than 30% of recyclable waste being collected through this workforce; notably, in Hanoi and Ho Chi Minh City alone, around 10,000–16,000 people engage in collection activities each day. In essence, this is a social resource already performing the function of extending material lifecycles, reducing the volume of waste sent to landfill or incineration, and supplying inputs to the recycling industry. More importantly, because women make up a large share of this sector, transforming the informal economy into an integrated part of the formal circular system also opens up an opportunity to connect environmental objectives with social goals—improving livelihoods, reducing the precarity of vulnerable workers, expanding access to social protection, and promoting social equity (SDG 10). In other words, by reconfiguring this human-centered ecosystem, a sector once positioned at the “margins” of the economy can be turned into an endogenous lever for circular economy development.

Pressure arising from free trade agreements (FTAs) is creating an important institutional and market-driven impetus for Vietnam to advance the circular economy. At present, Vietnam has participated in and negotiated 17 FTAs; according to the OECD, these agreements cover 53 economies, accounting for 87% of global GDP, and are linked to approximately 85% of Vietnam’s imports and 70% of its exports. As the bulk of Vietnam’s trade flows is now tied to FTA markets, new requirements relating to environmental standards, traceability, recycled content, carbon emissions, and extended producer responsibility can no longer be regarded merely as external pressures. Rather, they have become drivers compelling Vietnamese enterprises to redesign products, use materials more efficiently, extend product lifecycles, and reorganize supply chains along more circular lines. In this sense, pressure from FTAs in fact opens up opportunities for Vietnam to develop recycling industries, reverse logistics, eco-design, repair and reuse services, and eco-industrial parks—that is, the core components of a circular economy. These opportunities become even more evident as major markets intensify the “greening” of trade. The European Union, in particular, officially entered the implementation phase of the Carbon Border Adjustment Mechanism (CBAM) on 1 January 2026, making the reduction of emissions and the control of carbon content in products an increasingly direct condition of competitiveness. Conversely, this very pressure also creates opportunities for Vietnam to attract clean technologies, upgrade corporate governance, and foster the development of new sectors such as recycling, secondary materials, reverse logistics, and low-carbon manufacturing.

In practice, UNDP is supporting Vietnam's circular economy transition through the development of circularity guidelines, enterprise capacity-building, technology transfer, and market development for secondary materials, demonstrating that circularity is not only an environmental requirement but also an increasingly clear business opportunity. It can therefore be argued that FTAs not only generate pressure for change, but also create both the incentive and the strategic space for Vietnam to shift from a linear growth model toward a circular development model, thereby enhancing both export competitiveness and the quality of long-term growth.

4.2. Challenges to circular economy development in Vietnam

Vietnam's institutional and legal framework for the circular economy remains underdeveloped and not yet sufficiently coherent to steer the transition across the entire economy. While an initial legal basis has been formed, the policy system still lacks the clarity and consistency needed for economic actors to understand, apply, and evaluate the circular economy in a uniform way. As a result, many initiatives described as "circular" still focus on fragmented practices such as resource efficiency, recycling, or pollution control, rather than embodying a genuinely closed-loop model across the full product lifecycle. In addition, the absence of a unified set of criteria for identifying and measuring circular economy performance across sectors, localities, and enterprises has made both policymaking and implementation less effective. Without a common framework for monitoring and evaluation, the circular economy in Vietnam remains more of a policy orientation than a fully operational, transparent, and measurable system capable of shaping market behavior.

Capital constraints, high transition costs, and technological limitations continue to slow the development of the circular economy in Vietnam. This is because circular transformation requires not only changes in awareness, but also substantial investment in eco-design, clean technologies, recycling infrastructure, and post-consumption recovery systems. As the World Bank (2021) notes, many circular models in Vietnam, especially in the plastics sector, are hindered by high upfront costs, weak sorting and logistics systems, unstable supplies of recycled inputs, and an underdeveloped market for recycled materials. These barriers are particularly acute for small and medium-sized enterprises, which often face limited financial capacity and restricted access to green finance. As a result, technological upgrading remains slow, recycling activities largely stay at a low technical level, and the inconsistent quality of secondary materials weakens market confidence. This creates a vicious cycle in which financial constraints impede technological progress, while technological lag further discourages investment in circular economy development.

Recycling technology and waste management infrastructure in Vietnam have not yet met the requirements of a closed-loop, efficient, and environmentally safe circular system. Recycling activities in the country are still carried out under conditions of low technology, fragmentation, and weak integration with a modern collection, sorting, and treatment system. According to UNDP, more than 30% of waste in

Vietnam is collected through the informal sector. Material flows are then transferred mainly to recycling facilities, including craft villages, rather than passing through a modern and integrated waste treatment system. According to the study by Ta Thi Yen et al. (2024), many recycling facilities in Vietnam still operate at household scale, rely on manual technologies, use input materials that have not been properly cleaned, and lack necessary pollution control and waste treatment measures. Consequently, the recycling process not only achieves low resource recovery efficiency but also risks generating secondary pollution, thereby undermining the environmental value of the very activities considered “circular.” This bottleneck becomes even more serious because waste separation at source has not been effectively implemented in practice, weakening the entire circular chain from the input stage onward.

Governance capacity and implementation coordination remain fragmented, constituting a major bottleneck to the development of the circular economy in Vietnam. This is because the circular economy is inherently an intersectoral model, requiring integrated coordination across resource management, environmental governance, industry, agriculture, trade, science and technology, and local authorities. This challenge is clearly reflected in Decision No. 687/QĐ-TTg, under which the implementation of the National Scheme for Circular Economy Development must assign responsibilities to multiple ministries and sectors. The Ministry of Industry and Trade alone, for example, has been tasked with coordinating with the Ministry of Planning and Investment and the Ministry of Natural Resources and Environment to develop a system of criteria and circular economy models. As a result, the circular economy in Vietnam is easily reduced to pilot initiatives in individual sectors, while foundational conditions such as unified criteria, coordination mechanisms, monitoring systems, and an intersectoral action roadmap have yet to be fully established.

Vietnam has not yet built a sufficiently strong, large, and interdisciplinary pool of experts, engineers, and highly skilled technical personnel capable of leading circular economy development on a large scale. This shortage directly affects the development of the circular economy, first and foremost at the stage of model design and formation. Many models in Vietnam struggle to move beyond incremental improvements and evolve into fully integrated circular systems. The lack of leading experts and engineers also weakens the economy’s capacity for technological absorption. For small and medium-sized enterprises, shortages of specialized human resources raise transition costs and increase investment risks. More fundamentally, the absence of a strong corps of leading experts and engineers makes it difficult for the circular economy in Vietnam to develop in depth, meaning that it remains constrained in generating technological breakthroughs, technical standards, and scalable models. When the expert base is not yet sufficiently robust, Vietnam becomes more dependent on external consultants, while the localization of knowledge and the formation of a domestic circular innovation ecosystem remain slow. This not only affects the pace of business transformation, but also constrains the country’s capacity for policy design, standards development, technology appraisal, and the training of the next generation of professionals.

5. STRATEGIC SOLUTIONS FOR ADVANCING THE CIRCULAR ECONOMY TO REALIZE THE SUSTAINABLE DEVELOPMENT GOALS IN VIETNAM

In light of both the opportunities and the constraints currently facing Vietnam, the country must pursue the following measures in order to accelerate the circular economy and translate it into tangible progress toward the Sustainable Development Goals:

- ***Strengthen and refine the institutional and policy framework for the circular economy in a way that is coherent, measurable, and backed by sufficiently strong enforcement mechanisms.***

If the circular economy is to become a genuine engine of sustainable development rather than a merely rhetorical commitment, Vietnam must continue to consolidate its institutional framework in a more integrated, consistent, and cross-sectorally coordinated manner. The immediate priority is to establish a clear and operational legal framework governing eco-design, efficient resource use, waste reduction at source, reuse, and recycling, while simultaneously strengthening enabling instruments such as green credit, tax incentives, technical standards, eco-labeling, and mechanisms for measuring circular performance. Particular emphasis should be placed on the effective implementation of extended producer responsibility as a core policy instrument capable of internalizing environmental costs and driving innovation throughout the entire product life cycle. Fundamentally, institutional reform does not simply create a legal corridor for the circular economy; it lays down the structural foundation for a deeper transformation of the development model itself.

- ***Remove the bottlenecks of capital, transition costs, and technology***

Vietnam must build a focused and strategic green finance architecture, rather than continue with scattered and thinly spread support. The first priority is to lower firms' upfront investment costs through concessional green credit, credit guarantee funds, interest-rate subsidies, and tax incentives for equipment and production lines related to recycling, reuse, energy efficiency, and waste treatment. For small and medium-sized enterprises, dedicated financing mechanisms are needed for project preparation, technology assessment, and green certification, as these are the firms most likely to be blocked at the outset by limited financial and technical capacity. At the same time, green finance policy must be tightly linked to technology transfer at the level of industrial clusters, industrial parks, and localities, rather than leaving each enterprise to navigate the transition on its own. The state should prioritize investment in circular technology innovation support centers, shared recycling infrastructure, and demonstration models with strong replication potential. Over the longer term, concessional green credit should be combined with green bonds and green public procurement in order not only to expand financing, but also to create reliable market demand. Only when green capital becomes more affordable, technology more accessible, and transition costs more fairly shared can the circular economy move beyond fragmented pilots and take root as a substantive development pathway in Vietnam.

- ***Promote technological innovation and build an integrated circular infrastructure system, with priority given to source separation, reverse logistics, centralized sorting and recycling hubs, and the development of secondary materials markets.***

The transition to a circular economy requires an appropriate technological and infrastructural foundation capable of reorganizing material, energy, and information flows into closed-loop, efficient, and low-emission systems. Accordingly, priority should be given to investment in clean technologies, recycling technologies, advanced waste treatment solutions, and digital platforms that support resource management, product life-cycle traceability, and emissions control. In parallel, Vietnam must develop green logistics infrastructure and integrated systems for the collection, sorting, transport, and recycling of waste, designed around regional connectivity and value-chain integration. In the long run, the combination of technological innovation and circular infrastructure will determine whether the circular economy can be implemented at the scale of the national economy, rather than remaining confined to isolated initiatives. Only then can the circular economy generate meaningful impacts on SDG 11 on sustainable cities, SDG 12 on sustainable consumption and production, SDG 14 on marine ecosystems, and SDG 15 on terrestrial ecosystems.

- ***Upgrade state governance capacity toward stronger cross-sectoral and multi-level coordination.***

Vietnam needs a national circular economy coordinating body with real authority, rather than routine administrative coordination. This body should unify objectives, set sectoral priorities, assign responsibilities clearly, resolve institutional overlaps, and ensure that ministries, sectors, and localities act under a common policy framework. At the same time, Vietnam must establish a multi-level coordination mechanism from the central to the local level with clear accountability and measurable results. An integrated data system and a coherent indicator framework are also essential. Circular economy governance cannot rely mainly on descriptive reports; it must be based on quantitative data on material flows, reuse and recycling rates, resource efficiency, waste separation at source, emissions reductions, secondary materials markets, and the economic performance of circular models. Accordingly, Vietnam should promptly develop a national circular economy criteria framework by sector and level of governance, and align it with the statistical system, budget mechanisms, and enforcement tools to move toward evidence-based policymaking.

- ***Strengthen the role of enterprises and markets in driving the circular transition***

Enterprises must be recognized as the central actors in the practice of the circular economy, since they are the ones that directly determine product design, material selection, production organization, and post-consumption recovery. Accordingly, firms should be encouraged to transform their business models toward eco-design, cleaner production, product life extension, and greater reliance on reuse,

remanufacturing, and recycling. At the same time, greater supply-chain transparency and stronger compliance capacity with green standards are essential, as these are increasingly becoming decisive conditions of competitiveness in international markets. Yet enterprise transformation will only be sustainable if it is accompanied by the emergence of functioning markets for recycled products, green products, and circular services. Put differently, the circular economy can only scale up when policy incentives are converted into genuine market incentives.

- *Develop human capital and foster a culture of sustainable consumption*

This is a foundational condition for the effective functioning of the circular economy. Circular economy principles, green growth, and sustainable development should be systematically integrated into education, vocational training, and green skills development, particularly in areas such as eco-design, product life-cycle management, recycling, and resource data governance. Specialized training should also be provided for public officials in product life-cycle assessment, material flow management, the design of circular policy incentives, EPR monitoring, green public procurement, and the development of secondary materials markets. At the same time, communication and public education efforts must be strengthened in order to shape more responsible consumption patterns, with greater emphasis on product durability, reparability, reusability, and recyclability. Vietnam should also establish circular innovation centers that connect research institutes, universities, and businesses into a coherent innovation ecosystem.

- *Align the circular economy with Vietnam's strategy for implementing the SDGs*

In the Vietnamese context, the circular economy should be approached as an integrated development orientation rather than merely an environmental initiative. The greatest value of this model lies in its capacity to simultaneously support economic growth, stimulate innovation, create green jobs, reduce inequality, and protect ecosystems. For that reason, circular economy policies must be designed to contribute concurrently to the three pillars of sustainable development: economic, social, and environmental. This requires embedding circular objectives into sectoral development strategies, green growth agendas, energy transition policies, urban development, resource governance, and social welfare frameworks, while also building an indicator system capable of measuring the cross-sectoral impacts of the transition. This is not simply a matter of policy adjustment; it represents a deeper shift from sector-based management toward an integrated development approach.

CONCLUSION

At a time when traditional growth models are increasingly revealing their ecological and social limits, the circular economy has emerged as a new development logic that reconfigures the relationship between growth, equity, and sustainability. For Vietnam, the circular economy holds the potential to become an integrative mechanism capable of simultaneously advancing economic efficiency, social inclusion, and

environmental protection within the framework of the Sustainable Development Goals. Yet the value of this model does not lie in the proliferation of isolated initiatives, but in its capacity to be institutionalized as a systemic development strategy that connects institutions, technology, markets, and social behavior. The core challenge, therefore, is not simply to “implement” the circular economy, but to transform it into a foundational pillar of integrated development thinking. It is precisely in this sense that the circular economy can become one of the key pillars shaping Vietnam’s sustainable development trajectory in the decades ahead.

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SECTORAL COST OF GREEN HYDROGEN FOR SUSTAINABLE TRANSPORT AND INDUSTRIAL APPLICATION

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Abstract

This study evaluates the economic impact of green hydrogen use in the transportation and industrial sectors, specifically in Balıkesir. The analysis uses a reference economically sustainable sales price of 7.8 USD/kg H₂ calculated for a 1 MW PEM electrolyzer. Applications examined include heavy vehicles, city buses, refinery hydrogen substitution, ammonia, methanol, H₂-DRI iron and steel, industrial heat, and hydrogen-based electricity generation. Sector-based direct hydrogen costs were calculated using hydrogen consumption densities based on the literature, and a sensitivity analysis was conducted within a price range of 2–10 USD/kg H₂. The findings show that hydrogen costs vary significantly across sectors. In the reference scenario, the highest cost impact is observed in ammonia, methanol, and H₂-DRI applications, while industrial heat and electricity generation remain economically weaker. The results indicate that green hydrogen investments should be evaluated considering sector priority, consumption intensity, infrastructure, and policy support.

Keywords; Green hydrogen, Balıkesir, PEM electrolyzer, sectoral cost analysis, hydrogen economics, decarbonization, sensitivity analysis.

INTRODUCTION

Green hydrogen is becoming increasingly central to the global energy transition. It is considered a significant option, particularly for decarbonizing energy-intensive sectors that are difficult to directly electrify, strengthening energy supply security, and achieving net-zero emission targets. By combining renewable electricity with electrolysis, zero-emission hydrogen can be produced and used in various fields such as transportation, industry, electricity generation, and heating. However, the applicability of green hydrogen is highly dependent on both the region and the sector. The economics of hydrogen production, storage, distribution, and end-use vary according to renewable resource potential, technological maturity, infrastructure status, and policy framework. While the literature emphasizes that green hydrogen can make a significant contribution to decarbonization, it also notes that it is not an equally suitable and economical solution for every sector. Sectoral suitability; Hydrogen consumption intensity depends on factors such as the cost of hydrogen reaching the end user, technological maturity, necessary infrastructure, substitution potential, and the availability of alternative decarbonization options like direct electrification (Du et al., 2024; Robinius et al., 2017; Scharf, 2025). This study addresses these sectoral differences specifically in Balıkesir, Turkey, and correlates the Balıkesir-specific hydrogen price signal, calculated as approximately 7.8 USD/kg H₂ for a 1 MW PEM electrolyzer in a previous study, with hydrogen consumption densities obtained from the literature for selected transportation and industrial applications (Gül, 2026). Thus, it is possible to evaluate, from a regional perspective, which sectors can benefit more from green hydrogen under different hydrogen price and policy scenarios.

The key factor increasing the importance of green hydrogen is the fight against climate change and the sustainable development goals. In areas where direct electrification is technically or economically limited, such as high-temperature industrial processes, long-distance heavy transport, and ammonia and methanol production, hydrogen stands out as a significant decarbonization tool. In industry, hydrogen is often used as a raw material or reducing agent, while in transportation it enables fuel cell vehicles. In electricity systems, hydrogen can be used to balance fluctuations in renewable energy production and provide long-term energy storage. In these respects, green hydrogen is considered a technology compatible with net-zero emission scenarios envisioned by many international organizations (Du et al., 2024; Gómez & Castro, 2024; Scharf, 2025). However, the literature also reveals that the competitiveness of green hydrogen largely depends on local conditions. The cost of renewable electricity, electrolyzer investment cost and efficiency, capacity factor, storage and transportation needs, and regulatory incentives are the main factors determining the cost of hydrogen to the end-user. Low renewable electricity costs, high electrolyzer utilization rates, and policy tools such as investment support, tax breaks, carbon credits, difference contracts, and accelerated depreciation can increase the number of sectors where green hydrogen is viable (Gómez & Castro, 2024; Heo et al., 2025).

Looking specifically at Turkey, regional differences play a significant role in the development of the green hydrogen value chain. Turkey has significant potential in wind and solar energy, and this potential can provide a suitable foundation for local green hydrogen production. Balıkesir, in particular, offers a noteworthy regional example for green hydrogen applications in terms of industrial activities, logistical connections, and renewable energy sources. The region's proximity to transportation corridors, port facilities, and industrial clusters creates a structure where hydrogen can be evaluated in both production and consumption. Geographic information systems and multi-criteria decision-making-based studies on Turkey show that renewable energy potential varies from region to region and that location-sensitive analyses are important in planning energy infrastructures (Eroğlu, 2025; Gómez & Castro, 2024; Scharf, 2025). In this respect, Balıkesir can be considered a suitable area for examination in terms of both local decarbonization and the development of regional hydrogen value chains.

Although there is a vast literature on green hydrogen, a significant portion of the studies either focus on the cost of hydrogen production or examine hydrogen use within a specific sector. In contrast, studies that evaluate the hydrogen sales price calculated for a specific region in conjunction with hydrogen consumption intensities in different sectors are more limited. This gap is particularly important at the regional level, as the quality of renewable resources, industrial structure, demand profile, infrastructure capabilities, and policy environment are not the same in every region. This study aims to contribute to this gap by relating the hydrogen reference price specific to Balıkesir to hydrogen consumption intensities in selected transportation and industrial applications. Thus, the analysis shows not only how much hydrogen can be produced, but also the level of cost impact this hydrogen will have in different sectors. This approach is also consistent with previous studies that consider factors such as electricity price, electrolyzer CAPEX value, capacity factor, storage and distribution requirements that determine the levelized cost of hydrogen (Du et al., 2024; Ward et al., 2024). This also aligns with studies highlighting the importance of location, demand profile, and policy signals in regional hydrogen planning (Bachorz et al., 2024; Scharf, 2025).

The context of Turkey and Balıkesir further enhances the importance of this study. Turkey's energy system is transforming with renewable energy investments and requires new policy tools in line with decarbonization goals. Balıkesir's renewable energy potential, industrial structure, and logistical connections offer significant opportunities for establishing a regional hydrogen value chain. However, the abundance of renewable resources alone is not sufficient for the success of green hydrogen investments. Effective site selection and sector planning require the combined assessment of wind and solar potential, as well as grid connectivity, logistical infrastructure, industrial demand, and end-use clusters. Therefore, examining the reference price of 7.8 USD/kg H₂ specific to Balıkesir, together with hydrogen consumption intensities in different sectors, provides a more meaningful framework for regional decision-making (Du et al., 2024; Eroğlu, 2025; Gómez & Castro, 2024; Scharf, 2025).

This study, stemming from a research gap, takes the reference value of 7.8 USD/kg H₂ determined for Balıkesir as a starting point and aims to evaluate the economic impacts of green hydrogen use in selected transportation and industrial sectors under different hydrogen price scenarios. The main contribution of the study is to reveal in which applications green hydrogen can be prioritized by combining a regional hydrogen price signal with sector-based hydrogen consumption intensities. This approach shows that hydrogen investments should be evaluated not only on the basis of production cost, but also depending on the area of use, consumption intensity, infrastructure requirements, and policy conditions. Thus, the study contributes to the more rational planning of green hydrogen for sustainable transportation and industrial applications in Balıkesir and areas with similar regional conditions.

1. MATERIALS AND METHODOLOGY

This study evaluates the economic impact of green hydrogen use in the transportation and industrial sectors in Balıkesir, using a sector-based cost calculation approach. The basic calculation is based on determining the unit usage cost by multiplying the hydrogen sales or purchase price by the hydrogen consumption intensity of the relevant sector. In the reference scenario, the economically sustainable sales price for green hydrogen produced with a 1 MW PEM electrolyzer in Balıkesir was taken as 7.8 USD/kg H₂. Furthermore, a structure suitable for sensitivity analysis was created, considering that the hydrogen price could decrease with larger electrolyzer scales and policy incentives. The study examines heavy vehicles, city buses, refinery hydrogen substitution, ammonia, methanol, H₂-DRI iron and steel, industrial heat, and hydrogen-based electricity generation. These sectors were chosen because hydrogen is either used directly as a raw material or as an energy carrier that can replace fossil fuels. Each sector was evaluated based on a functional unit appropriate to its technical structure. In this context, the following units were used: kg H₂/100 km for transportation, kg H₂/ton of product for chemical production, kg H₂/barrel for refining, kg H₂/GJ for industrial heating, and kg H₂/kWh for electricity generation. Due to variability in the literature, hydrogen consumption densities were defined as lower, base, and upper values.

Table 1. Sector-based hydrogen consumption intensities.

Sector / application	Functional unit	Low value	Base value	High value	Literature basis
Heavy-duty vehicle / fuel-cell truck	kg H ₂ /100 km	6.5	8.5	10.0	(Digiesi et al., 2022; Jordan et al., 2025)
Urban fuel-cell bus	kg H ₂ /100 km	7.0	9.0	11.5	(Azimi & Van Der Spek, 2025; Cavaliere et al., 2021; Digiesi et al., 2022)
Refinery hydrogen substitution	kg H ₂ /barrel	0.5	0.9	1.8	(Yakubson, 2022)
Ammonia production	kg H ₂ /t NH ₃	175	180	190	(International Renewable Energy Agency & Ammonia Energy Association, 2022)
Methanol production	kg H ₂ /t MeOH	188	190	210	(Hank et al., 2018)
H ₂ -based direct reduced iron / iron and steel production	kg H ₂ /t DRI or steel	50	60	70	(Digiesi et al., 2022; Rechberger et al., 2020; Shahabuddin et al., 2025)
Industrial heat supply	kg H ₂ /GJ useful heat	8.8	10.0	12.0	(Iplik et al., 2022; Yu et al., 2021)
Hydrogen-based power generation	kg H ₂ /kWh electricity	0.055	0.060	0.083	(Adhikari & Khanam, 2024; Fan & Friedmann, 2021)

The values given in Table 1 were used as technical inputs in the study. In applications such as ammonia production, methanol production and H₂-DRI, hydrogen requirements are largely dependent on stoichiometric and process-based limits. In contrast, in applications such as heavy vehicles, buses, industrial heat and electricity generation, hydrogen consumption is more sensitive to factors such as vehicle efficiency, driving cycle, load condition, combustion system efficiency or electrical conversion efficiency. Therefore, the lower and upper limits have been kept wider in these sectors. The sector-based hydrogen cost was calculated with equation (1):

$$C_s = I_{H_2,s} \times P_{H_2} \quad (1)$$

Here, (C_s) represents the unit cost of hydrogen for the relevant sector; ($I_{H_2,s}$) represents the hydrogen consumption intensity of the sector; and (P_{H_2}) represents the hydrogen price. The hydrogen price is taken as USD/kg H₂. Thus, the direct cost of hydrogen per 100 km, ton of product, GJ of heat, or kWh of

electricity is calculated for each sector. In the reference scenario, the hydrogen price is taken as 7.8 USD/kg H₂, which is considered the economically sustainable sales price for a 1 MW PEM electrolyzer in Balıkesir. In addition, a sensitivity analysis was conducted in the range of 2–10 USD/kg H₂ to see the impact of hydrogen price changes on sector costs. This range was chosen to evaluate low-cost future scenarios, cost reductions that may occur with scaling up, policy incentives, and current high-cost small-scale production conditions together.

Table 2. Hydrogen price scenarios.

Scenario	Hydrogen price	Description
Low-price scenario	2 USD/kg H ₂	Long-term, large-scale, and optimistic cost condition
Medium-low scenario	3 USD/kg H ₂	Cost level achievable under economies of scale and favorable renewable electricity conditions
Medium scenario	5 USD/kg H ₂	Commonly used comparative cost level in the literature
Balıkesir reference scenario	7.8 USD/kg H ₂	Economically sustainable selling price for a 1 MW PEM electrolyzer system
High-price scenario	10 USD/kg H ₂	Small-scale or unsupported production conditions

This calculation approach directly shows the impact of hydrogen price on unit cost for each sector. For example, when the base hydrogen consumption for heavy vehicles is taken as 8.5 kg H₂/100 km, the cost of hydrogen-derived fuel at a price of 7.8 USD/kg H₂ is 66.3 USD/100 km. Similarly, when ammonia production uses a consumption value of 180 kg H₂/ton NH₃, the cost of hydrogen input is calculated as 1404 USD/ton NH₃ for the same hydrogen price. The values calculated in this study show only the direct cost component arising from hydrogen consumption, not the total sector cost. Vehicle investment cost, maintenance costs, refuelling station investment, process conversion cost, storage, transportation, carbon price, and byproduct revenues are not included in this basic calculation. This is because the study primarily aims to show how hydrogen price creates different cost effects across sectors. In conclusion, this method relates the green hydrogen price signal obtained specifically for Balıkesir to sector-based hydrogen consumption densities based on the literature. This allows for a comparative assessment of which sectors might be prioritized for green hydrogen adoption under different hydrogen price, scale-up, and policy support scenarios.

2. RESULTS AND DISCUSSION

The This section evaluates the direct cost impact of green hydrogen use in different sectors in Balıkesir. The sector-based hydrogen consumption densities given in the methods section were used in the calculations. In the reference scenario, the hydrogen price was taken as 7.8 USD/kg H₂, which is considered the economically sustainable sales price for green hydrogen produced with a 1 MW PEM

electrolyzer in Balıkesir. Sensitivity scenarios where the hydrogen price varies between 2–10 USD/kg H₂ were also examined.

2.1 Sector-Based Hydrogen Costs in the Reference Scenario

When the hydrogen price is assumed to be 7.8 USD/kg H₂ in the reference scenario, the unit costs of hydrogen by sector are given in Table 3. These values show only the direct cost component arising from hydrogen consumption, not the total production or service cost of each sector.

Table 3. Sector-specific hydrogen-related costs under the 7.8 USD/kg H₂ reference scenario.

Sector / application	Base H ₂ requirement	Functional unit	Hydrogen price	Hydrogen-related cost
Heavy-duty fuel-cell truck	8.5 kg H ₂	100 km	7.8 USD/kg H ₂	66.3 USD/100 km
Urban fuel-cell bus	9.0 kg H ₂	100 km	7.8 USD/kg H ₂	70.2 USD/100 km
Refinery hydrogen substitution	0.9 kg H ₂	barrel of crude oil	7.8 USD/kg H ₂	7.02 USD/barrel
Ammonia production	180 kg H ₂	t NH ₃	7.8 USD/kg H ₂	1,404 USD/t NH ₃
Methanol production	190 kg H ₂	t MeOH	7.8 USD/kg H ₂	1,482 USD/t MeOH
H ₂ -based DRI / iron and steel production	60 kg H ₂	t DRI or steel	7.8 USD/kg H ₂	468 USD/t
Industrial process heat	10 kg H ₂	GJ useful heat	7.8 USD/kg H ₂	78 USD/GJ
Hydrogen-based power generation	0.060 kg H ₂	kWh electricity	7.8 USD/kg H ₂	0.468 USD/kWh

According to Table 3, the impact of hydrogen on different sectors varies considerably at a price level of 7.8 USD/kg H₂. In transportation applications, the cost of hydrogen per 100 km is calculated as 66.3 USD for heavy vehicles and 70.2 USD for city buses. These values show that the economic viability of hydrogen fuel cell vehicles depends not only on the price of hydrogen but also on vehicle efficiency, annual range, refuelling infrastructure, and cost differences compared to diesel or battery-electric alternatives. In industrial applications, the impact of hydrogen input on product cost becomes more pronounced. The hydrogen-related cost per ton of NH₃ in ammonia production is calculated as 1404 USD/ton, and in methanol production as 1482 USD/ton. This result shows that the price of green hydrogen has a very strong impact on the final product cost in chemical production sectors. In contrast, the cost of hydrogen substitution in refinery applications remains at 7.02 USD/barrel. This indicates that although the unit

impact appears more limited in refinery applications, the demand for hydrogen may be significant due to the total production volume.

In H₂-DRI iron and steel applications, the hydrogen-related cost was found to be 468 USD/ton. This value shows that hydrogen cost is a critical determinant in green steel production. In industrial heat and electricity generation applications, the use of hydrogen as an energy carrier appears to be more expensive. With an H₂ price of 7.8 USD/kg, the cost for industrial heat is calculated as 78 USD/GJ, and the cost for electricity generation, solely from hydrogen input, is 0.468 USD/kWh. This result shows that hydrogen should be prioritized in sectors where direct electrification is difficult and where there is high emission reduction potential, rather than in general-purpose heat or electricity generation.

2. 2 Sensitivity Analysis Depending on Hydrogen Price

To visually evaluate the impact of hydrogen price changes on sector-based costs, H₂ price levels of 2, 3, 5, 7, 8, and 10 USD/kg were considered. The results given in Figure 1 show that the increase in hydrogen price linearly increases costs in all sectors; However, this effect varies in magnitude depending on the hydrogen consumption intensity of the sectors.

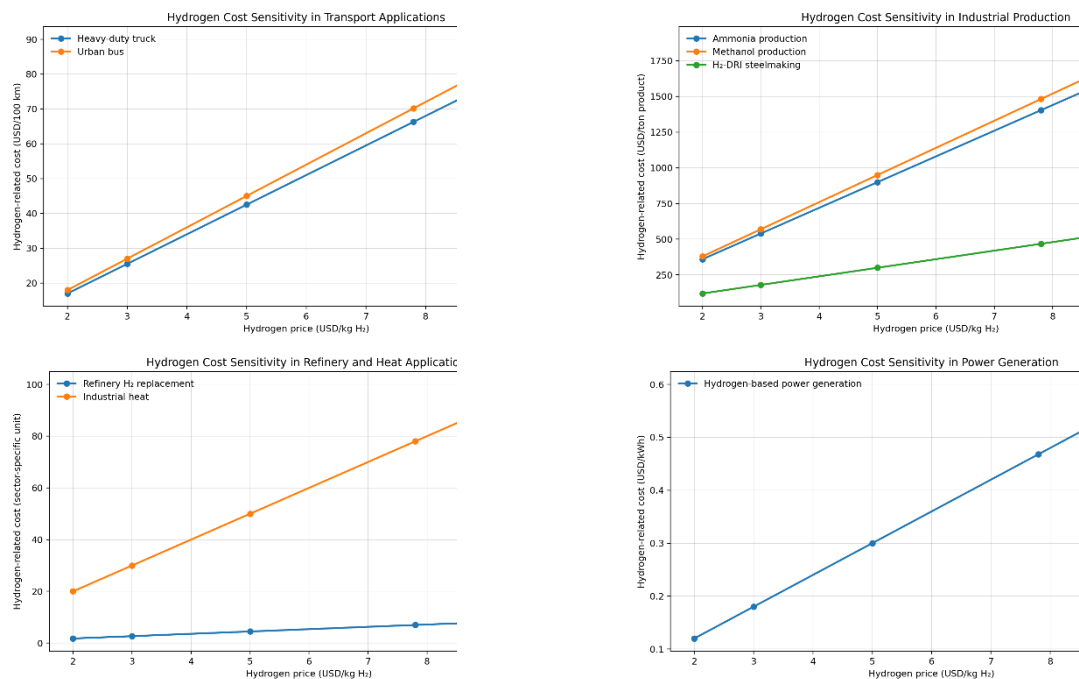


Figure 1. Hydrogen-related cost sensitivity of selected transport and industrial applications under different hydrogen price scenarios.

Figure 1 shows that the hydrogen price linearly affects sector-specific costs. If the hydrogen price falls from 7.8 USD/kg to 5 USD/kg, the hydrogen cost per 100 km for heavy vehicles decreases from 66.3 USD to 42.5 USD, and for city buses from 70.2 USD to 45.0 USD. This decrease demonstrates that the hydrogen

price is a decisive factor in terms of competitiveness, especially in fleet-based transportation applications. In industrial applications, the decrease in hydrogen price creates even larger absolute cost differences. For example, in ammonia production, the hydrogen input cost is 1404 USD/ton NH_3 when the hydrogen price is 7.8 USD/kg, while at 5 USD/kg this value drops to 900 USD/ton NH_3 . Similarly, in methanol production, the cost decreases from 1482 USD/ton MeOH to 950 USD/ton MeOH. This situation demonstrates that low hydrogen prices, scalability, and policy support are critical for the viability of green hydrogen, particularly in chemical production sectors. The change in hydrogen price is also quite significant in H_2 -DRI iron and steel applications. At an H_2 price of 7.8 USD/kg, the hydrogen-related cost is 468 USD/ton; at 5 USD/kg, it drops to 300 USD/ton, and at 3 USD/kg, it falls to 180 USD/ton. This result demonstrates that the economic viability of green steel production is highly sensitive to hydrogen price. Therefore, although H_2 -DRI applications have high emission reduction potential, they may require support mechanisms such as carbon pricing, green product premiums, or investment incentives in early-stage applications. The results for industrial heat and electricity generation clearly show the cost disadvantage of using hydrogen as a general energy carrier. When the hydrogen price is 7.8 USD/kg, the hydrogen input cost alone is 78 USD/GJ for industrial heat and 0.468 USD/kWh for electricity generation. Even if the hydrogen price were to fall to \$5/kg, these values would still be \$50/GJ and \$0.300/kWh, respectively. Therefore, widespread use of hydrogen in electricity generation and general industrial heating applications would only become meaningful if hydrogen prices were very low, carbon costs were high, or alternatives were technically limited.

3.3 Sectoral Prioritization

The findings reveal that green hydrogen does not exhibit the same level of economic viability across all sectors. Sectors such as refining, ammonia production, and methanol production, where hydrogen is already used as a raw material, can be considered among the first areas where green hydrogen can be implemented. However, in these sectors, particularly in ammonia and methanol production, the cost of hydrogen becomes a significant component of the final product cost, making low-cost hydrogen supply critical. H_2 -DRI iron and steel applications stand out as a strategic area of use due to their high emission reduction potential, although they are sensitive to hydrogen costs. This sector may become even more meaningful when considered in conjunction with carbon pricing, green steel demand, and investment incentives. On the transportation side, heavy vehicle and city bus applications are sectors that may become more competitive as hydrogen prices fall. Fixed-route bus fleets and logistics applications with centralized refuelling infrastructure may be more suitable for early-stage hydrogen adoption.

In contrast, industrial heat and hydrogen-based electricity generation appear economically weaker at a reference price of 7.8 USD/kg H_2 . Direct hydrogen use as fuel in these areas may struggle to compete with natural gas, direct electrification, or other low-carbon alternatives due to the high energy-based cost. Therefore, the use of hydrogen in these areas may be limited to more specific situations such as

high-temperature requirements, grid balancing, long-term energy storage, or backup power, rather than general energy production. Overall, the findings indicate that the 7.8 USD/kg H₂ reference price obtained at a 1 MW PEM electrolyzer scale in Balıkesir represents a high-cost level for many sectors. However, it appears that green hydrogen could become more viable, particularly in refining, ammonia, methanol, H₂-DRI, and some heavy transport applications, with a decrease in hydrogen prices if the electrolyzer scale increases, the capacity factor improves, renewable energy costs decrease, and policy incentives are implemented. Therefore, green hydrogen investments should focus not only on production costs but also on which sector will use this hydrogen and to what extent, and under what policy conditions it can become competitive.

CONCLUSIONS

Sustainable This study evaluates the economic impact of green hydrogen use in the transportation and industrial sectors in Balıkesir on a sector-by-sector basis. In the reference scenario, the economically sustainable sales price of green hydrogen produced with a 1 MW PEM electrolyzer was taken as 7.8 USD/kg H₂, and this price was correlated with the hydrogen consumption intensities of different sectors. The results show that green hydrogen does not create the same economic impact in all sectors. In the reference scenario, the hydrogen-related cost was calculated as 66.3 USD/100 km for heavy vehicles and 70.2 USD/100 km for city buses. This indicates that the competitiveness of hydrogen in the transportation sector is strongly dependent on fuel price, vehicle efficiency, annual usage distance, and refuelling infrastructure. The impact of hydrogen cost is more pronounced in the industrial sector. The hydrogen-related cost in ammonia production was found to be 1404 USD/ton NH₃, in methanol production 1482 USD/ton MeOH, and in H₂-DRI iron and steel applications 468 USD/ton. These results reveal that hydrogen price is a critical factor in the final product cost in areas such as chemical production and green steel. In contrast, the fact that the cost of refinery hydrogen substitution remains at USD 7.02/barrel indicates that the unit cost impact is more limited; however, due to the high production volume, there is significant potential in terms of total hydrogen demand.

Industrial heating and hydrogen-based electricity generation appear economically weaker at a reference price of 7.8 USD/kg H₂. Hydrogen-related costs of 78 USD/GJ for industrial heating and 0.468 USD/kWh for electricity generation indicate that hydrogen should be prioritized in sectors where direct electrification is difficult or where there is high emission reduction potential, rather than in general-purpose energy production. Sensitivity analysis revealed that decreases in hydrogen prices significantly alter the economic outlook of these sectors. If the hydrogen price falls from 7.8 USD/kg to 5 USD/kg, heavy vehicle costs decrease from 66.3 USD/100 km to 42.5 USD/100 km, the cost of hydrogen input in ammonia production decreases from 1404 USD/ton to 900 USD/ton, and in H₂-DRI applications from 468 USD/ton to 300 USD/ton. These results demonstrate that green hydrogen could become applicable in

more sectors if electrolyzer scale is increased, capacity factor is improved, renewable energy costs are reduced, and policy incentives are implemented.

Overall, the reference price of 7.8 USD/kg H₂ obtained at a 1 MW PEM electrolyzer scale in Balıkesir indicates a high-cost level for many sectors. However, it seems more rational to evaluate green hydrogen primarily in existing hydrogen-consuming sectors such as refineries, ammonia and methanol; in H₂-DRI iron and steel applications with high emission reduction potential; and in heavy transport applications with specific fleet conditions. This study did not limit the economic evaluation of green hydrogen solely to production cost, but correlated it with sector-based hydrogen consumption intensities. In future studies, the analysis can be expanded to include total cost of ownership, carbon reduction cost, life cycle emissions, hydrogen transportation and storage costs, and different electrolyzer scales.

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PUBLIC HEALTH AND ENVIRONMENTAL IMPACTS OF SUSTAINABLE CHEMICAL PRODUCT USE IN URBAN AREAS: THE CASE OF NOVALABS CHEMISTRY INC.

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Abstract

Urban life depends heavily on cleaning and hygiene products; however, their intensive use may also contribute to chemical exposure and environmental contamination. This study evaluates the production approach of NovaLabs Chemistry Inc., a Balıkesir-based company, from the perspective of sustainable chemistry and public health. Particular attention is given to environmentally compatible formulations, biodegradable ingredients, reduced hazardous content, and resource-efficient production practices. The NovaLabs model also emphasizes the use of locally sourced raw materials, which may support regional production while lowering transportation-related environmental burdens. In urban sanitation practices, such products have the potential to reduce pollutant loads entering water and soil systems and to support healthier living environments. Within this scope, a preliminary life cycle-based framework is being developed to assess product-specific carbon footprints. Raw material supply, production stages, energy consumption, and packaging are considered. The ongoing results will be presented at the conference.

Keywords; Sustainable chemistry, public health, urban sustainability, green chemistry, eco-friendly products, NovaLabs

INTRODUCTION

Urban environments are under rising environmental pressure as industrial activity, consumption, and urbanization intensify resource demands and generate a broader array of environmental burdens. The Marmara region and other rapidly developing urban corridors illustrate how industrial production, vehicle emissions, and consumer waste converge to elevate urban pollutant loads, with tangible impacts on air, water, and soil quality and on population health. Recent regional and global syntheses converge on the point that sustainable management of chemical use in cities is critical to mitigating these pressures while supporting resilient urban development [1], [2], [3], [4]. Foundational green chemistry and sustainable chemistry literatures provide enduring frameworks for understanding how design, process choice, and life-cycle thinking can decouple economic activity from environmental harm, thereby guiding urban industrial and consumer practices toward lower hazard and waste generation [1], [5], [6], [7].

Cleaning and hygiene products are central to urban environmental health due to their widespread use and complex environmental pathways. Life-cycle perspectives reveal that formulations, consumer behavior, and end-of-life management collectively determine the fate of cleaning agents in water bodies and soils, with potential aquatic toxicity and soil impairment if hazards persist through exposure pathways from production to disposal [3], [8], [9]. A growing body of literature emphasizes safer formulations, reduced persistent hazards, and safer solvent choices as mechanisms to lower urban environmental burdens,

while acknowledging trade-offs and the need for robust lifecycle verification to ensure real-world benefits [3], [7], [8]. In parallel, the circular economy lens highlights opportunities to reduce packaging waste and to reclaim or recycle components, thereby limiting downstream environmental loads in municipal wastewater and solid-waste streams [2], [7], [9].

Biodegradable and environmentally compatible formulations are increasingly positioned as central to sustainable chemistry in urban contexts. Advances in biocatalysis and renewable feedstocks offer pathways to redesign chemicals and processes for safety and end-of-life compatibility, aligning with circular economy objectives by enhancing degradability and recoverability without compromising performance [7], [10], [11], [12]. However, achieving true eco-friendliness requires rigorous lifecycle assessment, clear biodegradability criteria, and validated verification across products and markets to avoid misaligned “green” claims. The literature stresses that end-of-life considerations must be embedded at the design stage, supported by standardized metrics and cross-sector collaboration to ensure real improvements in environmental outcomes [2], [7], [9].

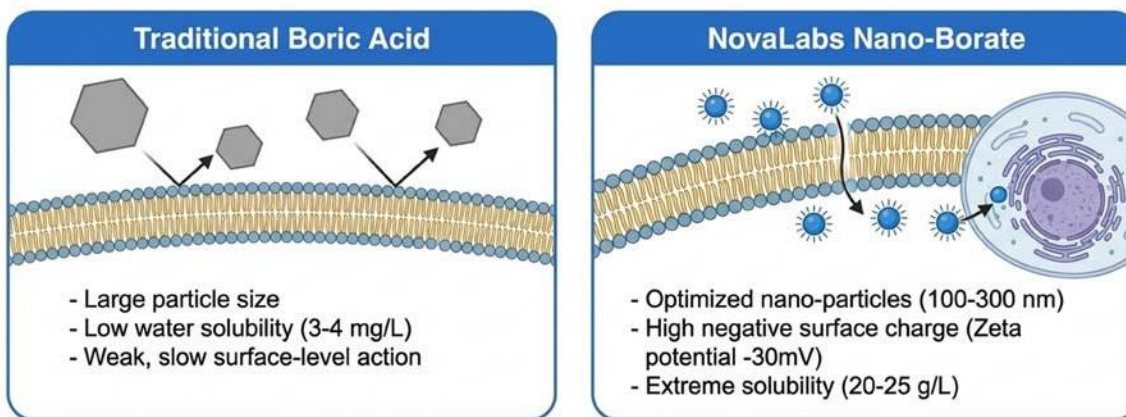
Circular economy and sustainable manufacturing practices intersect with green chemistry to reimagine chemical supply chains, production systems, and urban management. Circularity principles—designing for reuse, repair, and recycling; using renewable feedstocks; and minimizing energy inputs—are increasingly

integrated with green chemistry tenets to facilitate urban sustainability. Foundational and current reviews emphasize the need for new business models, policy incentives, and education to enable adoption of circular chemistry in manufacturing, while acknowledging barriers such as investment and regulatory harmonization that must be overcome through multi-stakeholder collaboration and metrics-driven governance [2], [7], [9], [12], [13]. Local sourcing and transparent sustainable supply chains emerge as practical levers for reducing urban environmental footprints, provided standardized indicators and procurement practices are in place to ensure impact reductions translate to real on-the-ground benefits [2], [3], [13], [14].

In the Turkish context, Balıkesir presents a strategic site for examining how sustainable chemistry and green manufacturing can be translated into urban health and environmental governance, given its mix of industrial activity, coastal resources, and proximity to major urban agglomerations in the Marmara region. The study uses NovaLabs Chemistry Inc. as a regional case to assess how a mid-sized chemical producer can align product design, supply chain choices, and municipal engagement with green chemistry principles, lifecycle thinking, and circular economy strategies. The aim is to (i) evaluate environmental and public health implications of NovaLabs' cleaning and hygiene formulations in urban catchments, (ii) analyze opportunities for biodegradable and eco-friendly formulations and safer process pathways, (iii) explore local sourcing and supplier collaboration as mechanisms to strengthen sustainability across the regional supply chain, and (iv) propose a framework for integrating municipal sustainability objectives with corporate practice to support sustainable urban management in Balıkesir and adjacent urban areas. This study thereby contributes to the broader discourse on sustainable urban sanitation, circular manufacturing, and responsible chemical product use in rapidly urbanizing settings, while providing a concrete regional lens on the implementation of foundational green chemistry concepts in a Türkiye context [1], [3], [5], [7], [13].

1. MATERIALS AND METHODOLOGY

This paper presents a case-study evaluation of NovaLabs Chemistry Inc., a mid-sized chemical producer based in Balıkesir, Türkiye, to examine how sustainable production practices can translate into urban environmental benefits. The study draws on NovaLabs' disclosed strategies toward green chemistry and resource-efficient operations, with emphasis on environmentally friendly formulations, the use of biodegradable components, and local raw-material sourcing to support regional sustainability objectives. The assessment framework combines qualitative description of the company's production approach with a quantitative, preliminary carbon footprint analysis for selected product groups. This framework follows a simplified life-cycle perspective that defines system boundaries to include raw-material sourcing and transportation, manufacturing processes, energy use, and packaging decisions, enabling rapid, conference-scale appraisal of key hotspots in product life cycles (cradle-to-packaging) while remaining adaptable to additional data as they become available [2], [5], [6].



A

specific focus is also placed on NovaLabs' nano-borate-based product development activities. Nano-sized borate additives are considered important because their high surface area and improved dispersion capacity may enable effective functional performance at relatively low concentrations. In this respect, the use of nano-borates can contribute to material efficiency by reducing the required additive amount while maintaining or enhancing cleaning, protective, or functional properties. This aspect is evaluated as part of the broader sustainable chemistry approach, since lower material input, improved product performance, and reduced formulation load are directly related to resource efficiency and environmental impact reduction.

Figure 1. Nanoborate activation model

The carbon footprint framework prioritizes product-level boundaries and uses straightforward, ISO-aligned steps suitable for early-stage evaluation. For selected product families, we estimate emissions associated with (i) raw-material procurement and intra-regional transport, (ii) process energy consumption and emissions during production, (iii) packaging and distribution-related impacts, and (iv) end-of-life considerations where applicable, all within a simplified LCA structure. This approach is consistent with foundational green chemistry and sustainable-manufacturing guidance that advocates product-design and supply-chain choices aimed at reducing hazard and resource intensity while maintaining performance [7], [9], [12]. Data inputs combine publicly available process

metrics, supplier disclosures, and best-practice estimates for energy intensity and packaging, with transparent assumptions and sensitivity checks to illustrate potential ranges under alternative scenarios [1], [14].

2. RESULTS AND DISCUSSION

Traditional Urban Chemicals		The NovaLabs Model
Toxic, High VOC, Phosphates	Formulation Base	Biodegradable, Nano-borate, Zero VOC
Toxic, BOC, eriopeatable	Raw Material Sourcing	Prounable, Sokc, VOC, & Maurs
Compulated, Resource Use	Resource Use	Lamocontrain-off Resource Use
Toxic Packaging Model	Packaging Model	Biodegradable, Imules, Packaging for Haund w/insulation
Biodegradable, Intervention	Pathogen Intervention	Biodegradable, Nano-borate, Zero VOC Pathogen Hiro Path

The

preliminary results from the NovaLabs case highlight meaningful environmental and public health benefits associated with sustainable chemical production practices in urban cleaning contexts. Environmentally friendly formulations and the use of biodegradable components, together with local raw-material sourcing, can reduce environmental contamination by lowering hazard profiles and promoting safer end-of-life pathways. This aligns with green chemistry and sustainable manufacturing frameworks that emphasize design for safety, reduced hazard, and minimized resource intensity across the product lifecycle [5], [6], [14]. In urban settings, these design choices also translate to lower downstream burdens in water and soil systems through safer solvent selections, reduced persistence of active constituents, and improved compatibility with municipal treatment and recycling streams [2], [7], [9].

Figure 2. Comparison Matrix: Traditional and Sustainable Chemistry

The ongoing project portfolio at NovaLabs—three focused initiatives tied to green formulation, circular packaging, and regional supply-chain optimization—illustrates how sustainable chemistry can drive public health and environmental protection outcomes. First, environmentally friendly formulations contribute to lower aquatic toxicity and reduced soil loading, supporting healthier urban water cycles and safer consumer products in line with lifecycle thinking and safer-by-design principles [1], [12]. Second, local sourcing and regional logistics strategies decrease transportation-related emissions and fossil-energy use, which is consistent with circular economy objectives and sustainable supply-chain management that emphasize shorter, more transparent material flows [8], [10]. Third, product innovations rooted in biodegradable ingredients support end-of-life recovery and

recycling goals, reinforcing the broader shift toward a closed-loop approach in urban manufacturing and municipal waste streams [3], [11].

A formal, product-based carbon footprint assessment is in progress for selected NovaLabs product groups. Early observations suggest substantial variations in environmental impact arising from raw-material selection, packaging choices, transportation distance, and production-energy intensity. These hotspots are being explored through a simplified life-cycle-based framework that scopes cradle-to-packaging boundaries and emphasizes data transparency and sensitivity analyses to inform decision-making at the corporate and municipal interface. While these preliminary findings point to clear differences among scenarios, the full carbon-footprint calculations remain under development and will be presented in detail at the conference. The approach follows ISO 14040/14044 guidance for LCA framing and leverages established green-chemistry metrics to contextualize results within sustainable manufacturing practice [15], [16], [17].

CONCLUSIONS

Sustainable chemistry practices in urban contexts are essential for protecting environmental quality, safeguarding public health, and advancing urban resilience. The NovaLabs case illustrates how environmentally responsible chemical production can reduce pollutant loads, lower exposure risks, and contribute to healthier urban living environments through the adoption of environmentally friendly formulations and production methods. By prioritizing biodegradable components and minimizing persistence in the environment, NovaLabs demonstrates a pathway to reduce urban pollution and its health impacts while supporting urban sustainability goals.

A hallmark of the NovaLabs approach is the use of biodegradable formulations coupled with local raw material sourcing and resource-efficient production. These choices align with broader evidence that green chemistries and locally sourced inputs can decrease supply-chain environmental impacts, reduce transportation emissions, and promote circular economy objectives in cities. The emphasis on materials that biodegrade or safely integrate into municipal waste streams helps mitigate long-term environmental contamination and supports public health by limiting exposure to persistent contaminants. Ongoing product-based carbon footprint assessment remains a critical component of NovaLabs' strategy. The assessment offers a transparent, data-driven basis for identifying improvement opportunities and for guiding future production decisions toward lower-carbon, resource-efficient processes. Early findings may inform scalable strategies for other urban manufacturers seeking to align economic performance with environmental and health objectives, thereby contributing to sustainable production paradigms in urban settings. Importantly, the NovaLabs case demonstrates how local industrial initiatives can catalyze sustainable urban development, contribute to circular economy practices, and promote environmentally responsible production approaches. By anchoring green chemistry in regional supply chains and urban planning considerations, such initiatives can reinforce urban environmental governance, stimulate stakeholder collaboration, and exemplify actionable pathways for healthier cities.

In sum, sustainable chemical production, as exemplified by NovaLabs, has the potential to reduce environmental pollution, enhance public health, and strengthen urban sustainability. Continued carbon footprint refinement, coupled with scalable uptake of biodegradable formulations, local sourcing, and resource efficiency, will shape future strategies for sustainable manufacturing in urban economies.

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DIGITAL TRANSFORMATION AS A FACTOR OF ENTERPRISE COMPETITIVENESS IN NORTH MACEDONIA: A DESCRIPTIVE ANALYSIS

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Abstract

Digital transformation is increasingly recognized as a key driver of business competitiveness, particularly in developing and transition economies. In the context of North Macedonia, where small and medium-sized enterprises (SMEs) constitute the backbone of the economic structure, the level of digital integration remains an important academic and practical issue. This paper aims to analyze the level of digital transformation among enterprises and to examine its relationship with perceived improvements in market competitiveness, operational efficiency, and sales performance.

The study adopts an empirical approach based on descriptive analysis of primary data collected through a structured survey conducted among small and medium-sized enterprises operating in different sectors in North Macedonia. The sample consists of firms selected through convenience sampling. Data analysis relies on descriptive statistical techniques, including frequency distribution, percentage analysis, and comparison of responses according to the level of digital adoption. Particular attention is given to the use of digital tools such as online sales platforms, digital marketing channels, accounting software, and internal management systems. The research seeks to identify whether firms that have invested in digital technologies report improvements in sales performance, customer base expansion, and operational efficiency. By focusing on a developing economy, the paper contributes to the growing literature on digital transformation in small markets and provides practical implications for managers and policymakers. The findings are expected to highlight the importance of supporting digital adoption as a strategic mechanism for strengthening competitiveness in North Macedonia's business environment.

Keywords: Digital transformation, Business competitiveness, Small and medium-sized enterprises (SMEs), Digitalization, Developing economies, North Macedonia, Digital tools adoption.

INTRODUCTION

In recent years, digital transformation has emerged as one of the most significant drivers of change in the global business environment. Rapid technological development, increased internet penetration, and the expansion of digital platforms have reshaped how enterprises operate, compete, and create value. Businesses are increasingly adopting digital tools to improve efficiency, enhance customer interaction, and respond more effectively to market dynamics (Vial, 2019). As a result, digitalization is no longer viewed merely as a technological upgrade but as a strategic necessity for maintaining competitiveness in modern economies (Bharadwaj et al., 2013).

The importance of digital transformation is particularly evident in small and developing economies, where enterprises face structural challenges such as limited market size, resource constraints, and increasing international competition. Small and medium-sized enterprises (SMEs), which represent the dominant share of businesses in most European economies, rely on digital technologies to expand market access and improve operational performance (OECD, 2021). The adoption of digital solutions such as online marketing, e-commerce platforms, and management software enables firms to reduce operational costs while increasing flexibility and responsiveness (Verhoef et al., 2021).

In the context of North Macedonia, digital transformation has gained growing attention among policymakers and business communities as part of broader economic modernization efforts. Despite gradual improvements in digital infrastructure and technology adoption, many enterprises still face challenges related to digital skills, investment capacity, and strategic implementation of digital tools. Consequently, understanding how digitalization influences business competitiveness remains an important research issue within the national economic environment.

This study aims to examine the level of digital transformation among enterprises in North Macedonia and to explore its perceived impact on business competitiveness. By focusing on descriptive empirical evidence gathered through a business survey, the research seeks to provide insights into how digital adoption relates to operational efficiency, market performance, and customer engagement. The findings are expected to contribute to the existing literature on digital transformation in developing economies while offering practical implications for managers and policymakers.

1. LITERATURE REVIEW

1.1 Digital Transformation in Business

Digital transformation refers to the integration of digital technologies into business processes, organizational structures, and value creation mechanisms, fundamentally changing how firms operate and deliver services. Unlike simple technological adoption, digital transformation involves strategic adjustments that reshape business models and organizational culture (Vial, 2019). Advances in

information and communication technologies have enabled companies to automate processes, improve decision-making, and enhance interaction with customers through digital platforms (Bharadwaj et al., 2013).

The increasing availability of cloud computing, data analytics, and online communication tools has accelerated the pace of digital change across industries. Firms adopting digital technologies are often able to increase efficiency and flexibility while reducing operational costs (Westerman et al., 2014). Moreover, digital transformation supports innovation by enabling businesses to develop new products, services, and distribution channels that were previously inaccessible (Nambisan et al., 2017). Consequently, digitalization has become a central component of long-term strategic development in modern enterprises.

1.2 Business Competitiveness

Business competitiveness is commonly defined as the ability of a firm to sustain market position, improve productivity, and achieve superior performance compared to competitors. According to Porter (1990), competitiveness is influenced by factors such as innovation capacity, efficiency, and the ability to respond to market changes. In contemporary economic environments, competitiveness increasingly depends on the effective use of technology and knowledge resources.

Digital tools allow firms to optimize internal processes, enhance communication, and improve customer relationship management, all of which contribute to competitive advantage (Porter & Heppelmann, 2014). Particularly for small and medium-sized enterprises, competitiveness is closely linked to adaptability and the capacity to adopt new technologies that support growth and market expansion (OECD, 2021). As markets become more digitalized, enterprises that fail to integrate technological solutions risk losing relevance and efficiency.

1.3 Digitalization and Enterprise Competitiveness

A growing body of literature highlights a positive relationship between digital transformation and business performance. Studies suggest that firms implementing digital technologies experience improvements in productivity, innovation capability, and customer engagement (Verhoef et al., 2021). Digital marketing platforms, for example, allow businesses to reach wider audiences at lower costs, thereby strengthening market presence and competitiveness.

Empirical research also indicates that digital adoption enhances operational efficiency through automation and data-driven decision-making (Brynjolfsson & McAfee, 2014). However, the impact of digitalization varies depending on firm size, managerial capabilities, and access to financial and technological resources. In developing and transition economies, barriers such as limited digital skills and insufficient investment capacity may slow the transformation process (World Bank, 2020).

Despite increasing global evidence, research focusing specifically on digital transformation and enterprise competitiveness in smaller economies, including North Macedonia, remains limited. This creates a research gap that justifies further empirical investigation. By examining the level of digital adoption and its perceived effects on competitiveness, this study aims to contribute to a better understanding of how digital transformation influences business development within a transitional economic context.

2. METHODOLOGY

2.1 Research Design and Approach

This study adopts a quantitative research approach supported by descriptive analysis to examine the relationship between digital transformation and business competitiveness among enterprises in North Macedonia. A descriptive research design was selected because it allows the researcher to analyze current practices and perceptions without manipulating variables or applying complex experimental procedures (Creswell, 2014).

The research focuses on identifying patterns of digital technology adoption and evaluating how businesses perceive its impact on operational and market performance. Rather than testing causal relationships through advanced econometric models, the study emphasizes empirical observation and interpretation of collected data, which is appropriate for exploratory research in developing economic environments.

The study follows a cross-sectional design, meaning that data were collected at a single point in time from participating enterprises. This approach enables an overview of the current level of digital transformation within the business sector and provides insights into contemporary managerial practices (Saunders et al., 2019).

2.2 Data Collection Method

Primary data were collected through a structured questionnaire distributed to enterprises operating in different economic sectors. The survey method was chosen due to its effectiveness in gathering standardized information from a relatively large number of respondents within a limited time frame.

The questionnaire was designed to capture three main dimensions:

1. General characteristics of enterprises
2. Level of digital technology adoption
3. Perceived impact of digitalization on competitiveness

Most questions were formulated using closed-ended formats, including multiple-choice and Likert-scale questions, allowing easier comparison and quantitative interpretation of responses (Bryman, 2016).

Data collection was conducted through online distribution channels and direct communication with business representatives. Participation was voluntary, and respondents were informed that collected data would be used solely for academic purposes.

2.3 Sample Characteristics

The study targets small and medium-sized enterprises (SMEs), as they represent the dominant structure of the economy in North Macedonia. Businesses from various sectors, including trade, services, manufacturing, and information technology, were invited to participate in the survey.

The sampling method can be classified as convenience sampling, commonly used in exploratory business research where access to respondents depends on availability and willingness to participate (Etikan et al., 2016).

Table 1. Sample Structure by Enterprise Size

Enterprise Size	Number of Firms	Percentage (%)
Micro enterprises	54	36%
Small enterprises	60	40%
Medium enterprises	36	24%
Total	150	100%

The inclusion of enterprises of different sizes allows comparison of digital adoption patterns across organizational structures.

2.4 Research Variables

The research framework is based on two main categories of variables:

- **Independent concept:** Digital transformation
- **Dependent concept:** Business competitiveness (perceived)

Digital transformation is evaluated through indicators such as the use of websites, social media marketing, e-commerce platforms, accounting software, and digital management tools. Competitiveness is assessed through perceived improvements in efficiency, customer reach, and sales performance.

Table 2. Research Variables and Indicators

Concept	Indicators	Measurement Type
Digital Transformation	Website use, social media, e-commerce, software adoption	Yes/No& frequency
Operational Efficiency	Process improvement, time reduction	Likert scale
Market Performance	Sales growth, customer expansion	Likert scale

Concept	Indicators	Measurement Type
Competitiveness	Managerial perception	Likert scale

2.5 Data Analysis Techniques

Collected data were analyzed using descriptive statistical methods. The analysis focuses on:

- Frequencies and percentages
- Mean values of responses
- Comparative interpretation between groups

Descriptive statistics are appropriate for identifying trends and summarizing respondent perceptions without requiring advanced statistical modeling (Field, 2018). Results are presented through tables and structured comparisons to facilitate interpretation.

The analysis aims to identify whether enterprises that adopt more digital tools report higher perceived levels of competitiveness and operational improvement.

2.6 Reliability and Ethical Considerations

To ensure reliability, questionnaire items were formulated based on previously validated studies addressing digital transformation and business performance. Questions were kept clear and concise to minimize respondent misunderstanding. Ethical standards were maintained throughout the research process. Respondents participated anonymously, and no sensitive business information was requested. Data confidentiality was preserved, and results are presented only in aggregated form.

2.7 Research Limitations

Despite its contributions, the study has several limitations. The use of convenience sampling limits the generalizability of findings to the entire business population. Additionally, the research relies on self-reported perceptions rather than objective financial indicators, which may introduce subjective bias. However, perception-based analysis remains widely used in management research when evaluating strategic and organizational change (Podsakoff et al., 2003).

3. RESULTS AND DISCUSSION

3.1 Profile of Respondent Enterprises

The first stage of the analysis examines the general characteristics of participating enterprises in order to provide contextual understanding of the sample structure. The surveyed businesses operate across multiple economic sectors, reflecting the diversity of the business environment in North Macedonia.

Table 3. Distribution of Enterprises by Sector

Sector	Number of Firms	Percentage (%)
Trade	48	32%
Services	42	28%
Manufacturing	30	20%
Information Technology	18	12%
Other	12	8%
Total	150	100%

The results indicate that trade and service-oriented businesses dominate the sample, which corresponds with the general economic structure of the country where SMEs are primarily concentrated in these sectors. This distribution allows the study to capture digital adoption trends among businesses with different operational models.

In terms of years of operation, most enterprises have been active for more than five years, suggesting that respondents possess sufficient market experience to evaluate the impact of digital transformation on competitiveness.

3.2 Level of Digital Technology Adoption

The second phase of analysis evaluates the extent to which enterprises have adopted digital tools in their daily operations.

Table 4. Adoption of Digital Tools

Digital Tool	Enterprises Using (%)
Company Website	68%
Social Media Marketing	82%
Accounting Software	74%
Online Sales (E-commerce)	46%
Digital Management Systems	38%

The findings reveal a relatively high adoption rate of basic digital tools, particularly social media platforms and accounting software. Social media appears to be the most accessible entry point into digital transformation due to low implementation costs and ease of use.

However, more advanced digital solutions such as integrated management systems and e-commerce platforms show lower adoption rates. This suggests that while businesses recognize the importance of digital presence, deeper digital integration remains limited. Similar patterns have been observed in developing economies, where firms adopt customer-facing technologies faster than internal digital systems (OECD, 2021).

3.3 Perceived Impact of Digitalization on Operational Efficiency

Respondents were asked to evaluate how digital technologies influenced internal business operations using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

Table 5. Impact on Operational Efficiency

Statement	Mean Score
Digital tools reduce operational time	4.2
Digital systems improve organization of work	4.0
Communication with customers improved	4.3
Decision-making became faster	3.8

The results indicate generally positive perceptions regarding operational efficiency. The highest mean score relates to improved customer communication, confirming the role of digital platforms in strengthening interaction and responsiveness.

The relatively lower score related to decision-making suggests that many enterprises may still lack advanced data analytics capabilities, limiting the strategic benefits of digital transformation. This finding aligns with previous studies emphasizing that digital adoption alone does not guarantee strategic transformation without managerial adaptation (Verhoef et al., 2021).

3.4 Digitalization and Market Performance

The study also investigated whether enterprises perceive improvements in market outcomes after adopting digital tools.

Table 6. Perceived Market Performance Improvements

Indicator	Agree or Strongly Agree (%)
Increase in customer reach	76%
Improvement in brand visibility	80%
Growth in sales performance	58%
Better customer retention	64%

The results suggest that digital transformation contributes more strongly to marketing-related outcomes than direct financial performance. Increased brand visibility and customer reach were the most frequently reported benefits, indicating that digital platforms primarily enhance market exposure.

Sales growth, although positive, shows comparatively lower agreement levels. This may indicate that financial outcomes require longer periods to materialize following digital investments, particularly for SMEs with limited resources.

3.5 Comparative Analysis: Digital Adoption and Competitiveness

To further explore the relationship between digitalization and competitiveness, enterprises were grouped according to their level of digital adoption.

Table 7. Competitiveness Perception by Digital Adoption Level

Level of Digital Adoption	Average Competitiveness Score
Low adoption	3.1
Moderate adoption	3.8
High adoption	4.4

The comparison demonstrates a clear positive relationship between digital adoption and perceived competitiveness. Firms with higher levels of digital integration consistently report stronger competitive positioning.

These findings support existing research suggesting that digital transformation enhances firm adaptability and innovation capacity (Bharadwaj et al., 2013). Digital tools appear to function as enabling mechanisms that allow enterprises to respond more efficiently to market demands.

3.6 Discussion of Findings

Overall, the results indicate that enterprises in North Macedonia are undergoing gradual digital transformation, primarily driven by accessible technologies such as social media and basic software solutions. While digital awareness appears relatively high, the transition toward advanced digital systems remains incomplete.

The findings confirm that digitalization contributes positively to operational efficiency and perceived competitiveness, supporting the study's research hypotheses. However, the impact is uneven across business functions, with stronger effects observed in marketing and communication activities than in strategic decision-making processes.

This pattern reflects structural characteristics typical of transition economies, where businesses adopt incremental rather than fully integrated digital strategies (World Bank, 2020). Limited financial resources, insufficient digital skills, and organizational resistance may explain slower adoption of complex digital systems.

From a managerial perspective, the results suggest that enterprises should move beyond basic digital presence toward integrated digital management practices. For policymakers, the findings highlight the importance of supporting digital training programs and incentives aimed at accelerating SME digitalization.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

The purpose of this study was to examine the role of digital transformation as a factor influencing enterprise competitiveness in North Macedonia through a descriptive empirical approach. The findings indicate that digitalization has become an increasingly important component of business operations, particularly among small and medium-sized enterprises seeking to adapt to changing market conditions.

The results demonstrate that a significant proportion of enterprises have adopted basic digital tools such as social media platforms, accounting software, and company websites. These technologies primarily support communication, marketing activities, and administrative efficiency. The widespread adoption of accessible digital solutions suggests that businesses recognize the necessity of digital presence in maintaining market relevance.

The analysis further shows that digital transformation contributes positively to operational efficiency. Enterprises reported improvements in workflow organization, faster communication with customers, and reduced operational time. These findings are consistent with previous research highlighting the efficiency-enhancing effects of digital technologies in business environments (Westerman et al., 2014).

In terms of market performance, digitalization appears to have a stronger influence on customer reach and brand visibility than on immediate financial outcomes. While many enterprises perceived improvements in sales performance, the results suggest that financial benefits may emerge gradually as digital strategies mature. This observation supports the argument that digital transformation is a long-term strategic process rather than an instant performance solution (Verhoef et al., 2021).

A key finding of the study is the positive relationship between the level of digital adoption and perceived competitiveness. Enterprises with higher levels of digital integration reported stronger competitive positioning compared to firms with limited digital engagement. This indicates that digital technologies function as enabling resources that enhance adaptability, innovation potential, and responsiveness to market changes.

Despite these positive developments, the study also identifies existing challenges. Many enterprises remain at an early stage of digital transformation, relying mainly on basic tools rather than integrated digital management systems. Limitations related to financial resources, digital skills, and strategic planning continue to slow deeper digital integration within the business sector.

Overall, the findings confirm that digital transformation represents an important driver of competitiveness in North Macedonia's enterprise environment, although the process remains gradual and uneven across firms.

4.2 Recommendations

Based on the findings of this study, several recommendations can be proposed for businesses, policymakers, and future researchers.

Recommendations for Enterprises

Businesses should move beyond basic digital presence toward comprehensive digital strategies that integrate operational, managerial, and marketing functions. Investment in digital management systems and employee digital skills training can significantly enhance productivity and decision-making capacity. Managers should view digital transformation not merely as technological adoption but as an organizational change process requiring strategic planning.

Recommendations for Policymakers

Public institutions should strengthen support mechanisms aimed at accelerating SME digitalization. Policies may include financial incentives for digital investments, training programs focused on digital competencies, and partnerships between educational institutions and businesses. Improving access to digital education and technological infrastructure can reduce barriers faced by smaller enterprises (OECD, 2021).

Recommendations for Future Research

Future studies may expand the research by including larger samples and applying advanced statistical techniques to examine causal relationships between digital transformation and financial performance. Comparative studies across Western Balkan countries could also provide deeper insights into regional digital development patterns. Additionally, longitudinal research would help assess how digital adoption influences competitiveness over time.

4.3 Final Remark

Digital transformation is reshaping the competitive landscape of modern economies, and enterprises in North Macedonia are gradually adapting to this new reality. While progress is evident, continued investment in digital capabilities and strategic implementation will be essential for sustaining long-term competitiveness in an increasingly digital global market.

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AGILE METHODOLOGIES IN VOCATIONAL TRAINING

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Abstract

The aim of this presentation is to explore the advantages of teamwork and the use of tools that foster cohesion, creativity, observation, role development, and the application of agile techniques and methodologies in Vocational Training. It will also include examples of their implementation in the classroom. Why and for what purpose should we foster teamwork? It is essential for future professional development and for the classroom, to develop social skills, improve learning, and foster emotional connection among participants.

Techniques and activities for cohesion, creativity, and observation include the spaghetti tower, brainstorming, the paperclip technique, the desert island challenge, the NASA dynamic, and the cash register challenge, among others.

Team roles include: team builder, leader, implementer, evaluator, critic, researcher, and completer. Each role contributes to the organization and success of the teamwork.

eduScrum: an agile methodology created in the Netherlands in 2013 by Willy Wijnads, inspired by Scrum. To form autonomous teams, improve social skills, and enhance learning. It includes cycles of planning, working, reviewing, and reflecting, with meetings and team agreements. Participants learn to work in teams, cooperate and independently research information, organize and distribute tasks equitably, present topics, learn actively, and creativity.

Design Thinking: a method for designing products, services, and projects, which includes phases such as empathy mapping, needs identification, ideation, prototyping, and testing. You will learn: a fun and effective method for teamwork that facilitates the resolution of important problems.

Webography and bibliography: on Eduscrum, Design Thinking, ICT tools such as Miro, Trello, Kanban, Mentimeter, and Xplane.

Keywords: Agile Methodologies, Teamwork, Creativity

1. WHY AND FOR WHAT PURPOSE SHOULD WE FOSTER TEAMWORK?

In the professional future, it is necessary to work as a team.

A good atmosphere is fostered in the classroom.

Social skills are trained.

Learning is improved.

There is more emotional connection.



2. TECHNIQUES AND DYNAMICS OF COHESION, CREATIVITY AND OBSERVATION.

Spaghetti tower dynamics. You can also do the variant of cutting the spaghetti, not using twine and putting the cloud divided.

Brainstorming technique.

Clip technique. Creativity in groups of 4 students who are saying different uses to a clip, each group is given a clip.

Desert island dynamics survivors.

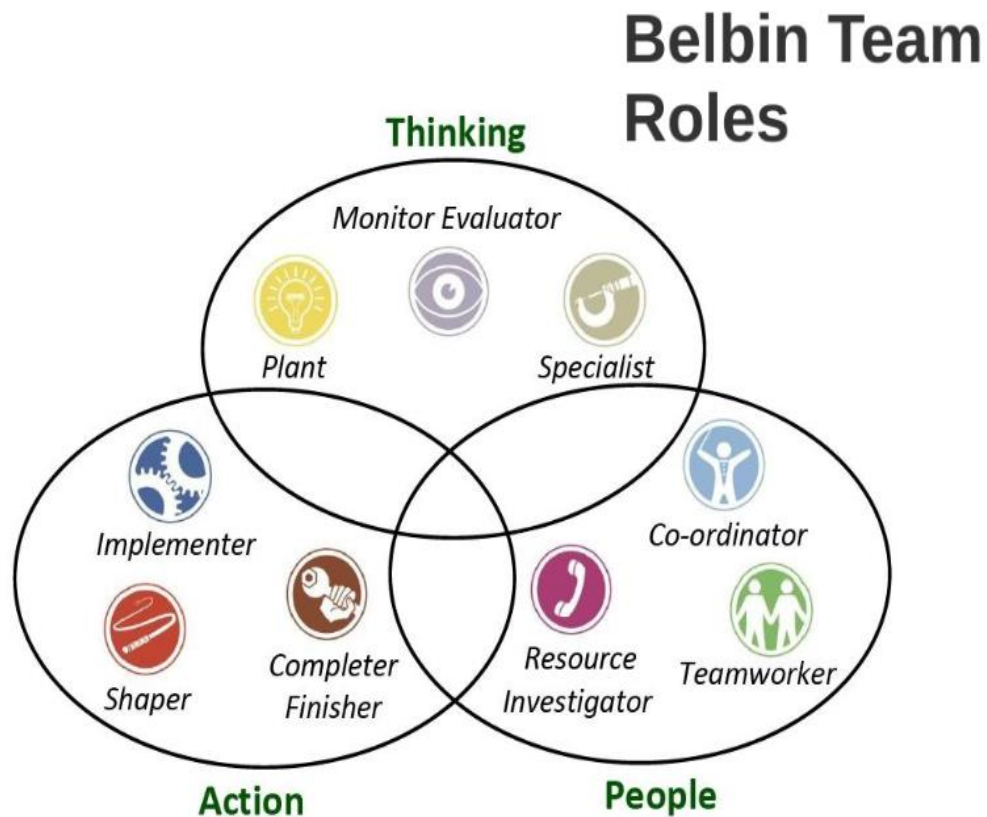
NASA Dynamics

Dynamic cash register.

3. ROLES

Team roles include: team builder, leader, implementer, evaluator, critic, researcher, and completer. Each role contributes to the organization and success of the teamwork.

Also Belbin teams roles help to build teams.



4. EDUSCRUM

Following the agile SCRUM methodology in Holland, a professor of Physics and Chemistry, Willy Wijnads, creates the Method eduScrum for the year 2013, see more videos on webografia.

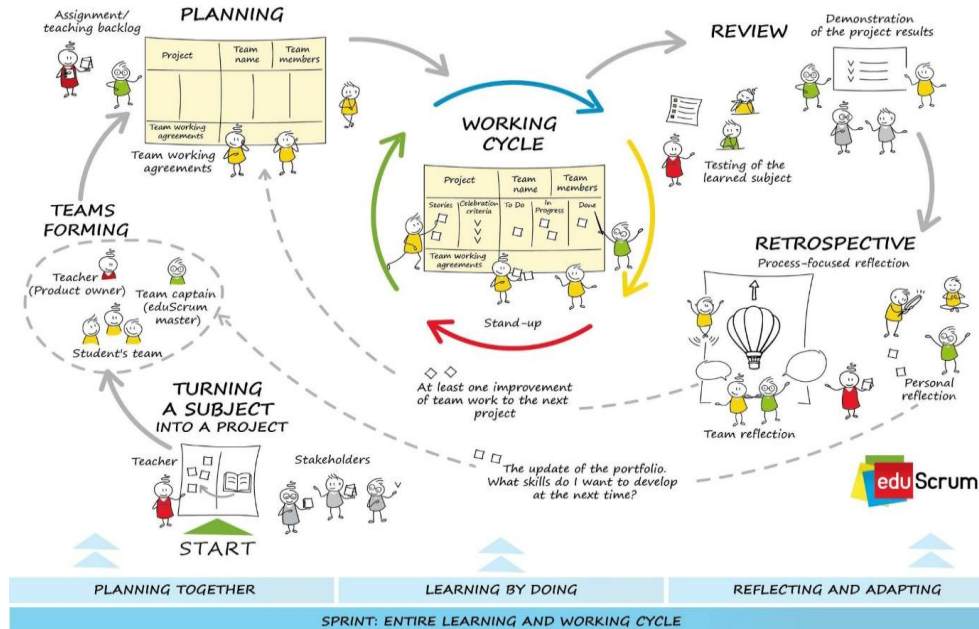
Objectives:

Create teams of students working autonomously

Improve in social skills

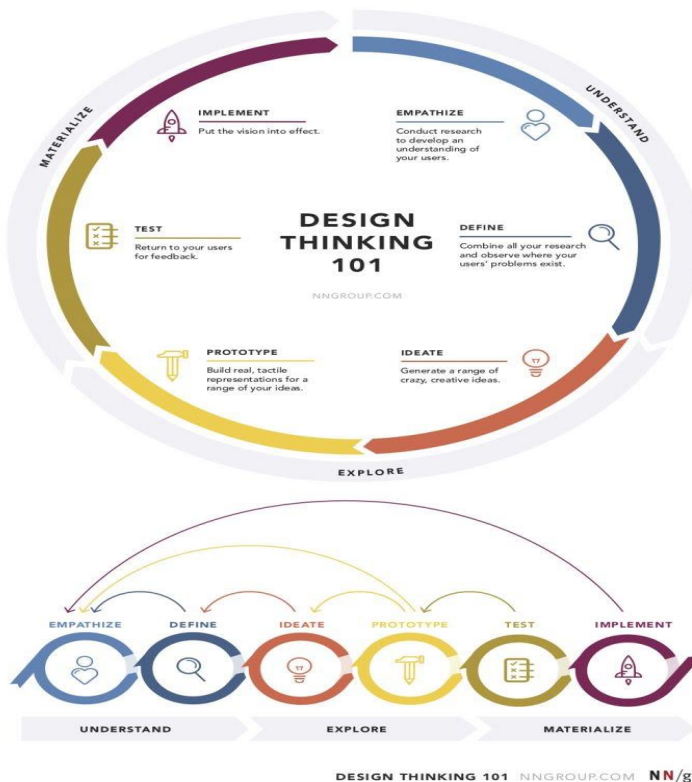
Improve learning

How eduScrum works



5. DESIGN THINKING

Method of designing products, services and projects, see more videos on webografia



6. WEBOGRAPHY AND BIBLIOGRAPHY

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3. Eduscrum templates and videos to explain to students: long, short.
4. Design Thinking see video of the presentation and others: long, short.
5. Empathy map see video of the presentation, templates and others.
6. ICT tools for teamwork: Miro, Trello, Kanban, Mentimeter, Xplane, Clickup...

TURNING KNOWLEDGE INTO CAPITAL: HOW ADULT EDUCATION AND RVCC UNLOCK COMMUNITY ENTREPRENEURSHIP IN RURAL TERRITORIES

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Abstract

This study examines how Adult Education and the Recognition, Validation and Certification of Competencies processes (RVCC) can be strategically mobilized to activate human capital, foster local entrepreneurship and promote sustainable development in Almodôvar, a low-density rural municipality in the Alentejo region. Based on a qualitative and exploratory approach, supported by semi-structured interviews with 15 participants, including learners and programme promoters, and analysed through thematic analysis, the research repositions competency recognition as a strategic resource rather than merely an educational outcome.

The findings show that structured learning pathways and the recognition of experiential knowledge function as catalysts for individual empowerment, increased employability and strengthened entrepreneurial confidence, generating human capital with relevance for local economic dynamics. At the community level, these initiatives reinforce trust-based cooperation networks and stimulate civic engagement, both essential for territorially rooted entrepreneurial ecosystems. However, structural barriers persist, including mobility constraints, scheduling rigidity and resource scarcity, which limit expansion, sustainability and overall impact.

Keywords: Adult Education; RVCC; Strategic Empowerment; Community Entrepreneurship; Human Capital; Territorial Resilience; Lifelong Learning; Rural Development.

INTRODUCTION

Low-density rural territories across southern Europe face persistent structural challenges, including depopulation, demographic ageing, economic fragility, and limited institutional density, which together constrain their development trajectories; in regions such as Alentejo in southern Portugal, these dynamics have eroded local labour markets and weakened the conditions for entrepreneurship and innovation, yet a growing body of research on endogenous rural development argues that the future of these territories depends less on attracting external resources than on activating and mobilising locally available assets, particularly human capital (Almeida and Daniel, 2023). Within this perspective, adult education and lifelong learning emerge as strategic levers for territorial resilience, and in Portugal, the RVCC process, delivered through the national network of Qualifica Centres, allows adults to formally validate knowledge and skills acquired through professional, civic, and everyday experience; by converting tacit and often invisible knowledge into recognised qualifications, RVCC has the potential to improve employability, strengthen self-confidence, and expand individuals' capacity to engage in economic and entrepreneurial activity (Biney, 2023), although the principal challenge facing many low-density territories is not the absence of capabilities but the limited recognition and mobilisation of competencies that already exist within their communities. Despite the policy relevance of these processes, their role as instruments of human capital activation and community entrepreneurship in rural contexts remains insufficiently understood, particularly from the perspective of those who experience them directly, as existing research has tended to treat competency recognition as an educational outcome rather than as a strategic resource for local development. This study addresses this gap by examining how Adult Education and the RVCC process can be strategically mobilised to activate human capital, foster local entrepreneurship, and promote sustainable development in Almodôvar, a low-density rural municipality in Alentejo, adopting a qualitative and exploratory approach based on semi-structured interviews with fifteen participants, including adult learners and programme promoters, which were analysed through thematic analysis to reposition competency recognition as a strategic resource rather than a mere educational result.

1. THEORETICAL FRAMEWORK

The theoretical architecture of this study integrates three interconnected domains: human capital theory applied to territorial development, lifelong learning and competency recognition as instruments of empowerment, and community entrepreneurship as a dimension of endogenous rural development.

Human capital theory conceptualises investment in education, skills and experiential knowledge as a driver of productive capacity and territorial resilience, and in low density rural regions the recognition and formalisation of competencies acquired through life and work experience, such as those validated through RVCC processes, can be understood as a mechanism of human capital activation whereby the conversion of tacit knowledge into recognised qualifications improves individuals' labour market positioning and

expands their potential contribution to local economic development and entrepreneurial activity (Bin & Qiong, 2024).

This process is reinforced by transformative and experiential learning perspectives, which emphasise that adult learning grounded in lived experience promotes identity reconstruction, agency and enhanced self-efficacy, particularly among adults with interrupted educational trajectories, where reflective and autobiographical methodologies enable participants to reinterpret professional, family and community experiences as valuable learning assets and recognised competencies (Wang et al., 2021).

At the community level, social capital and communities of practice provide a useful lens for understanding how learning environments generate trust based networks with entrepreneurial relevance, as shared learning experiences and mutual recognition foster collaborative norms, peer support and knowledge exchange, thereby strengthening entrepreneurial ecosystems embedded in local territories while, in rural contexts, these relational resources often compensate for institutional fragility and limited market opportunities (O'Connor & Audretsch, 2023).

Within this framework, community entrepreneurship is understood not merely as business creation but as the collective mobilisation of local actors around shared development objectives, with adult education initiatives that strengthen local capabilities, social cohesion and collaborative action contributing to the emergence of community based entrepreneurial processes and sustainable rural development (Hertel et al., 2019).

Despite this conceptual richness, the three domains have largely developed in parallel, leaving important gaps. Although human capital theory and lifelong learning explain individual qualification and social capital explains collective cooperation, the literature rarely explains how the formal recognition of experiential competencies serves as a bridging mechanism that converts activated individual human capital into collective, territorially embedded entrepreneurship, particularly in low-density rural settings where institutional support is scarce, and entrepreneurial ecosystem research remains predominantly urban-centric and provides limited conceptual tools for these rural territories, where the configuration of actors, resources, and institutions differs markedly from metropolitan contexts (Aguilar, 2021). In parallel, recognition of prior learning in Portugal has been examined chiefly through a utilitarian, employability-oriented lens, with little attention to its potential as a catalyst of community entrepreneurship and endogenous development (Guimarães & Mikulec, 2021). Finally, the gendered and contextual barriers that determine who can effectively mobilise recognised competencies remain under-theorised, even though they decisively shape participation and outcomes in rural areas (Semkunde et al., 2022). Addressing these interrelated gaps, the present study positions RVCC as a strategic resource for human capital activation and community entrepreneurship in a low-density rural territory.

2. METHODOLOGY

The study adopts a qualitative descriptive-exploratory design, an approach that is particularly suitable for examining social phenomena through the meanings and interpretations attributed by participants to their own experiences (Colorafi & Evans, 2016). This methodological orientation is consistent with the objective of understanding how educational processes are experienced and perceived in specific contexts rather than evaluating them through standardised quantitative indicators (Doyle et al., 2020).

Data were collected through semi-structured interviews, a widely used technique in qualitative research because it allows participants to describe their experiences while providing sufficient flexibility to explore emerging themes (Kallio et al., 2016). The sample comprised 15 participants divided into two groups: ten adult learners enrolled in or recently completing RVCC processes at the Qualifica Centre of Almodôvar and five programme promoters and technical staff involved in the planning and implementation of adult education initiatives. Participants were selected through purposive sampling to ensure diversity in educational background, occupational status, and level of engagement with the programmes, thereby maximising the richness and variation of perspectives collected (Campbell et al., 2020).

Two interview protocols were developed, one for each participant group, following recommendations that interview guides should be adapted to the characteristics and roles of respondents to enhance the relevance and depth of the data obtained (Kallio et al., 2016). The interviews were structured around five thematic dimensions: educational trajectories and participation experiences; expectations and perceived outcomes; individual and community impacts; barriers and facilitating factors; and recommendations for programme improvement. Interviews lasted approximately 90 minutes, were conducted face-to-face, audio-recorded with participants' consent, and subsequently transcribed verbatim to ensure the accuracy and completeness of the data (Doyle et al., 2020).

Data analysis followed the thematic analysis framework proposed by Braun and Clarke (2006), a flexible and rigorous method for identifying, analysing, and interpreting patterns within qualitative data. The analytical process involved familiarisation with the data, systematic coding supported by MAXQDA software, the development and refinement of thematic categories, and independent validation by two researchers to enhance analytical consistency and credibility (Braun & Clarke, 2006). To further strengthen the trustworthiness of the findings, methodological triangulation was employed through the comparison of interview data with programme documentation and institutional reports, a strategy widely recognised for improving the credibility and robustness of qualitative research (Carter et al., 2014).

3. RESULTS AND DISCUSSION

The findings demonstrate that the RVCC process extends well beyond its formal educational function, acting as a mechanism for human capital activation and local development. Both adult learners and

programme promoters highlighted that the recognition of competencies acquired through professional and life experiences contributed to significant changes in self-perception, confidence, and social positioning. Participants reported a stronger awareness of their capabilities and greater legitimacy regarding their knowledge and skills, while formal certification was associated with improved employability, enhanced professional credibility, and, in some cases, opportunities for self-employment or the expansion of existing economic activities.

These findings support the argument that the recognition of prior learning transforms experiential knowledge into formally recognised competencies with economic and social value (Baumeler et al., 2023). By making previously informal and often invisible knowledge visible and transferable, RVCC contributes not only to educational attainment but also to employability, self-efficacy, and entrepreneurial readiness, a result that is consistent with recent evidence from Portuguese Qualifica Centres (Cardim et al., 2026; Biney, 2023). The reflective portfolio methodology emerged as a particularly important tool in this process, enabling participants to identify, organise, and communicate competencies developed throughout their life trajectories (Calha, 2017).

The results further indicate that RVCC contributes to the activation of entrepreneurial attitudes and lifelong learning dispositions. Fourteen participants reported improvements in professional competencies, twelve highlighted increased self-confidence, and ten indicated greater participation in community activities. Several learners described a greater willingness to take initiative, manage professional risks, and formalise previously informal practices. Although business creation was not directly assessed, these outcomes reflect key antecedents of entrepreneurial behaviour, including confidence, self-awareness, and perceived legitimacy. This evidence reinforces previous research highlighting the role of human capital development and lifelong learning in fostering entrepreneurship and regional resilience (Biney, 2023).

At the collective level, the programmes generated important relational benefits. Most participants referred to the creation or strengthening of cooperation networks, mutual support relationships, and local social ties that frequently persisted beyond the duration of the educational activities. Promoters emphasised that the programmes created valuable opportunities for interaction in a geographically dispersed rural territory, contributing to trust-building, collective identity, and collaborative capacity. These findings are particularly relevant from a territorial development perspective, as informal social networks often function as entrepreneurial support structures in contexts characterised by low institutional density (Hammer & Frimanslund, 2022). Previous studies similarly emphasise the importance of social capital and cooperative networks in supporting entrepreneurship and local economic development (Zhao & Li, 2021).

The results also suggest that the principal challenge facing low-density rural territories is not a lack of capabilities but rather the limited recognition and mobilisation of existing competencies (Almeida & Daniel, 2024). By validating knowledge acquired through work, civic participation, and everyday experience, RVCC transforms latent resources into active development assets that strengthen both individual agency and community participation (Baumeler et al., 2023).

Despite these positive outcomes, participants identified several barriers that restrict programme accessibility and long-term impact, including transportation difficulties, scheduling inflexibility, limited resources, and insufficient outreach. These constraints were particularly significant for women with caregiving responsibilities. Such barriers reflect broader spatial inequalities that characterise many rural territories and continue to limit the scalability of adult education initiatives. Consistent with previous research on rural entrepreneurship and territorial development, overcoming these challenges requires flexible, locally embedded, and partnership-based implementation models capable of responding to the specific realities of low-density regions (Pato et al., 2021; Candeias & Sarkar, 2022).

CONCLUSION

This study examined how RVCC process can be strategically mobilised to activate human capital, foster local entrepreneurship, and promote sustainable development in a low-density rural municipality in Alentejo. Drawing on a qualitative and exploratory approach, the findings show that RVCC operates well beyond its formal educational function by acting as a mechanism for human capital activation and local development. At the individual level, the recognition of competencies acquired through life and work experience strengthens participants' self-perception, confidence, and social legitimacy, while formal certification is associated with improved employability, professional credibility, and, in some cases, opportunities for self-employment or the expansion of existing activities, outcomes that reflect key antecedents of entrepreneurial behaviour and suggest that competency recognition nurtures entrepreneurial readiness and lifelong learning dispositions. At the collective level, the programmes reinforce trust-based cooperation networks, mutual support, and civic engagement, which are relational resources of particular importance in geographically dispersed territories characterised by low institutional density. Taken together, the results support the central argument that the main challenge facing low-density rural territories is not a lack of capabilities but rather the limited recognition and mobilisation of existing competencies, since by making invisible knowledge visible and transferable, RVCC converts latent resources into active development assets that strengthen both individual agency and community participation. Nevertheless, structural barriers, including mobility constraints, scheduling rigidity, resource scarcity, and limited outreach, continue to restrict accessibility and long-term impact, with particularly significant effects for women with caregiving responsibilities, which indicates that overcoming these constraints requires flexible, locally embedded, and partnership-based implementation models attuned to the realities of low-density regions. This study is not without limitations, as its qualitative and exploratory design and its focus on a single municipality limit the generalisability of the

findings, and entrepreneurial outcomes were assessed through perceptions and antecedents rather than measured business creation. Future research could adopt comparative or longitudinal designs across multiple territories, combine qualitative and quantitative evidence, and examine more directly the long-term links between competency recognition, entrepreneurship, and territorial resilience. Overall, the study reinforces the value of repositioning adult education and competency recognition as strategic instruments for unlocking community entrepreneurship and sustainable development in rural territories.

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DIGITAL TRANSFORMATION AND THE FUTURE OF WORK: RETHINKING HUMAN CAPITAL IN THE DEVELOPMENT OF PRODUCTIVE FORCES IN VIETNAM

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Abstract

The Fourth Industrial Revolution is profoundly reshaping global economic structures and labor relations. Within this context, digital transformation serves as the core catalyst, fundamentally altering the relationship between labor, technology, and knowledge. From the perspective of Marxist-Leninist philosophy, the emergence of Artificial Intelligence (AI) and Big Data represents more than a mere shift in instruments of labor; it reflects a qualitative turning point in modern productive forces. This study analyzes the impact of digital transformation on the future of work in Vietnam, elucidating the evolving role of human resources in the development of productive forces. Utilizing a philosophical analysis grounded in the theories of Marx, Engels, and Lenin on productive forces, combined with a synthesis of international scientific literature on digital transformation and the future of employment, this research asserts that developing digital-competent human resources is a prerequisite for advancing modern productive forces. Consequently, the study proposes solutions for developing digital human resources in Vietnam to meet labor market demands, overcome the middle-income trap, and achieve sustainable development in the digital era.

Keywords: Digital transformation; Productive forces; Future of work; Human capital; Vietnam.

INTRODUCTION

The history of human development, in the final analysis, is the history of the replacement and refinement of the instruments of labour aimed at liberating humanity from its dependency on nature. In *The German Ideology*, Karl Marx and Friedrich Engels asserted: "As individuals express their life, so they are... [this] coincides with their production, both with what they produce and with how they produce" (Marx & Engels, 1995). Today, entering the third decade of the 21st century, humanity is witnessing a profound qualitative transformation of the productive forces, driven by the explosion of Artificial Intelligence (AI), Big Data, and the Internet of Things (IoT).

The emergence of these technologies does not merely represent an addition of more sophisticated devices to the existing repertoire of the instruments of labour; rather, it is fundamentally altering the nature of what Karl Marx termed the "bone and muscular system of production." While previous industrial revolutions primarily sought to replace human physical exertion with mechanical machinery, the current digital transformation is penetrating deeper, substituting and augmenting complex cognitive functions. AI is no longer a passive tool; it has evolved into an entity capable of self-optimization, transforming the "object of labour" from tangible material entities into streams of intangible data that possess immense economic value.

In Vietnam, the process of industrialization and modernization imposes an urgent demand for accessing and mastering the achievements of digital transformation. However, reality is revealing a profound dialectical contradiction: a "mismatch" between the rapid penetration of modern production technologies and the adaptive capacity of the workforce—the most dynamic factor and the subjective element within the productive forces. While digital infrastructure and technical platforms are "forging ahead" at a breakthrough pace, the skill levels, managerial mindsets, and the capacity for knowledge-mastery among laborers show signs of "lagging behind," failing to achieve commensurability. This imbalance gives rise to a critical research problem: without a "re-conceptualization" of the nature of human resources within the new structure of the productive forces, Vietnam faces not only the risk of squandering technological investment but also the danger of falling into the "low-value trap" within global supply chains. This "re-conceptualization" transcends mere technical skill training; it entails re-establishing the subjective status of human beings in their relationship with digital instruments of labour.

Consequently, this study aims to provide a profound analysis of the transformation in the character and structure of the productive forces in Vietnam. Specifically, it seeks to elucidate the shift from "manual labour" to "knowledge-and-data-driven labour," thereby establishing a scientific foundation for redefining the role and position of Vietnamese human resources. Distinct from purely economic inquiries, this research adopts a philosophical perspective to demonstrate how knowledge has become a "direct

productive force"—a prerequisite for resolving the contradiction between the imperatives of technological development and the actual human capacity in the endeavor of building a new society.

1. LITERATURE REVIEW

The study of the relationship between technology and labour is by no means a nascent field; however, under the impetus of the Fourth Industrial Revolution, theoretical perspectives have undergone pivotal shifts. Through a systematic synthesis of existing scholarship, the author observes the following:

On the international level, research has concentrated heavily on redefining the structure of the productive forces. Klaus Schwab (2016) warned of a systemic shift wherein digital technologies do not merely automate repetitive tasks but also "encroach" upon higher-order cognitive skills, thereby fundamentally altering the "bone system" of production. Echoing this view, Erik Brynjolfsson and Andrew McAfee (2014) identified a "decoupling" between productivity growth and labour income. They argue that unless human capital is restructured to achieve compatibility with intelligent machinery, society will inevitably confront technological unemployment and profound socio-economic inequality.

In Vietnam, scholars such as Nguyen Van Huyen (2021) have begun to update this trend by asserting that in the digital era, the productive forces are transitioning into a "digitalized" state, where AI and data become organic components, thereby altering the character of traditional means of production.

However, when benchmarking these theories against the reality of developing economies like Vietnam, a core issue remains under-theorized: the compatibility between the "new technological morphology" and the "proficiency of the labour subject" within a transforming social structure.

While domestic studies by Tran Dinh Thien (2022) or reports from the Central Institute for Economic Management (CIEM) primarily focus on economic indicators, technical metrics, governance, or superficial skill gaps, the philosophical dimension and the intrinsic motion of the productive forces remain obscured. Specifically, there is a lack of clarity regarding the transformation process: how can knowledge and data truly become "direct productive forces" (as envisioned in the Leninist tradition) in an economy characterized by uneven labour proficiency? Current research often bifurcates technology (as a technical factor) and the labourer (as a social factor), failing to perceive them as a unified digital productive force undergoing a qualitative transformation. In the context of developing nations that traditionally rely on the advantage of low-cost labour, re-establishing the "subjective" role of the worker in the face of AI "encroachment" remains a significant and unresolved theoretical question.

On this basis, the present study focuses on exploring the interplay between digital transformation and the development of modern productive forces. By elucidating the evolving role of Vietnamese human resources within the new production system, this paper contributes to establishing a scientific foundation

for resolving the contradiction between "modern instruments" and "execution capacity," thereby shaping a sustainable pathway for the nation in the digital age.

2. RESEARCH METHODOLOGY

This study is conducted based on an interdisciplinary approach within the social sciences, integrating philosophical analysis, systematic literature synthesis, and policy analysis to elucidate the relationship between digital transformation and the future of labour in the development of Vietnam's productive forces.

First, philosophical analysis serves as the theoretical foundation of the research, grounded in the conceptions of productive forces formulated by Karl Marx, Friedrich Engels, and Vladimir Ilyich Lenin. According to this framework, productive forces are constituted by the dialectical unity of labour power, the means of production, and the developmental stage of science and technology. On this basis, the study analyzes how digital technologies—such as Artificial Intelligence (AI), Big Data, and automation—are transforming the structure of the productive forces and reshaping the role of human resources within the digital economy.

The method of document synthesis and analysis is employed to systematize domestic and international scholarship regarding digital transformation, the future of work, and the knowledge economy. This approach enables the identification of dominant research trends as well as existing theoretical and empirical gaps.

Finally, policy analysis is applied to examine Vietnam's digital transformation strategies and programs, alongside its strategic orientations for human resource development in the context of industrialization and modernization. The integration of these methodologies allows the study to clarify the theoretical basis for the evolution of productive forces in the digital age while providing a scientific framework for evaluating the role of digital human capital in Vietnam's sustainable development.

3. RESEARCH RESULTS

3.1. The Role of Digital Human Resources in the Development of Modern Productive Forces

According to Karl Marx, the productive forces represent a dialectical unity between labour power, the means of production, and the level of science and technology. Within this framework, human beings maintain a subjective role, as they are the creators, operators, and developers of the instruments of production. In *Capital*, Marx emphasized that "the development of the means of labour reflects the development of social labour power" (Marx, 1976). This implies that as science and technology advance to a new stage, the quality of human resources must undergo a corresponding transformation to effectively harness modern production technologies. Entering the era of digital transformation, the role of the labourer is not eclipsed by machinery; on the contrary, it transitions into a higher, more advanced

form: Digital Human Resources. This is not merely a change in nomenclature but a qualitative transformation in the practical capacity of the labour subject.

In the digital economy, digital human resources are understood as a workforce capable of utilizing, innovating, and adapting to digital technologies within production and management processes. The formation of this workforce is intrinsically linked to three fundamental dimensions: digital skills, creative capacity, and technological adaptability. These factors do not merely enhance labour productivity; they contribute to the qualitative shift of the productive forces in the modern economy. While the productive forces in the industrial economy were primarily associated with machinery and physical capital, the decisive factor in the digital economy is knowledge capital and human digital proficiency. In other words, the modern productive forces are shifting from the model of "manual labour – machinery" to "intellectual labour – data – digital technology."

Currently, the advancement of digital technology significantly enhances the role of high-skilled labour within the production process. There is a discernible correlation between the proportion of highly educated and technical labour and labour productivity in the digital economy. Indeed, the proliferation of technical and high-skilled labour can substantially drive the production efficiency of enterprises within digital environments (Zhang et al., 2025). This indicates that digital human resources are no longer merely a component of the productive forces but have emerged as the central factor determining the productivity and competitiveness of the economy in the digital era.

First and foremost, digital skills are regarded as the bedrock of labour in the digital economy. Digital skills do not merely entail proficiency in operating technological devices; rather, they represent the capacity to manage, control, and optimize production processes based on data platforms. These skills are considered a core element in determining economic productivity and competitiveness. The emergence of the network society has altered the structure of the production process, as "economic value is increasingly created through the capacity to process and apply information" (Manuel Castells, 2010). In this context, labourers do not simply perform basic technical operations; they must possess the ability to interact with data systems, digital platforms, and intelligent technologies.

If, in mechanical production, labour skills were associated with manual dexterity and physical prowess, then in the modern productive forces, digital skills represent the "materialization" of logical and algorithmic thinking into the process of value creation. There exists an inextricable link between digital skills and the evolution of modern productive forces. According to reports by the Organisation for Economic Co-operation and Development (OECD), a workforce equipped with advanced digital skills can significantly bolster labour productivity and catalyze innovation within enterprises (OECD, 2019). Furthermore, digital proficiency facilitates "universal connectivity," enabling labourers to command complex production systems remotely, thereby blurring the distinction between direct and indirect

labour. This phenomenon epitomizes the transformation of science into a direct productive force, precisely as envisioned by the classical theorists of Marxism-Leninism. This transition is particularly crucial for developing economies like Vietnam, where digital transformation offers an opportunity to leapfrog technological gaps while simultaneously demanding a rapid escalation in the skill levels of the workforce.

Secondly, creative capacity serves as the primary engine for innovation within the productive forces. Alongside digital skills, the creative potential of human resources plays a pivotal role in driving the evolution of the productive forces. In a knowledge-based economy, economic value is not merely derived from physical labour; it increasingly depends on human ingenuity and innovation. According to Richard Florida (2002), modern economies are witnessing the emergence of the "creative class," comprising workers capable of generating knowledge, technology, and high-value-added products.

In the context of digital transformation, creative capacity is manifested in the ability to develop new business models, design digital products, and apply technology to resolve socio-economic issues. This aligns with the perspective of Joseph A. Schumpeter, who argued that innovation is the core engine of economic development through the process of "creative destruction" (Schumpeter, 1942). Similarly, in *The Second Machine Age*, Erik Brynjolfsson and Andrew McAfee (2014) contend: "Machines are for answers; humans are for questions." In Vietnam, research by Tran Dinh Thien (2022) also asserts that the creative capacity of human resources is the key for Vietnam to transcend "digital outsourcing" and move toward "digital design," thereby capturing higher surplus value within global value chains. In a digital economy, a creative workforce not only enhances labour productivity but also catalyzes the emergence of new economic sectors grounded in digital technology.

Thirdly, technological adaptability serves as a prerequisite for maintaining the dynamism of the productive forces. Adaptability represents the dynamic expression of labourers in resolving the contradiction between rapidly evolving technological levels and finite individual capacities. A defining characteristic of the digital economy is the accelerating pace of technological innovation, which necessitates that labourers continuously adapt to emerging technologies. This adaptability encompasses not only the acquisition of new skills but also cognitive flexibility, the capacity for collaboration in digital environments, and a commitment to lifelong learning. According to the World Economic Forum (2023), approximately 50% of the global workforce will require reskilling or upskilling in the coming decade due to the impact of automation and AI. This underscores that technological adaptability is becoming a vital condition for maintaining employment and ensuring the sustainable development of the productive forces. Adaptability enables humans to master new instruments of labour rather than being displaced by them. In *Marxist-Leninist Political Economy: Theoretical and Practical Issues*, Nguyen Van Huyen (2021) points out that this adaptation is the essential condition for establishing commensurability between the labourer and modern means of production, ensuring the seamless and efficient operation of the productive forces.

In conclusion, within the digital economy, digital human resources transcend being a mere constituent element of the productive forces to become the decisive factor in the development of modern productive forces. By possessing digital skills, creative capacity, and technological adaptability, the workforce can effectively harness advanced technologies, catalyze innovation, and enhance labour productivity.

Therefore, the development of digital human resources must be regarded as a pivotal strategy in Vietnam's socio-economic development process. Investing in education, digital skill training, and the cultivation of an innovation ecosystem will establish the foundation for a high-skilled workforce, thereby accelerating the formation of modern productive forces and bolstering the economy's competitiveness in the digital era. For Vietnam, the development of digital human resources is no longer a matter of choice but a historical necessity to propel the productive forces beyond traditional constraints, moving toward sustainable development in the era of the knowledge-based economy.

3.2. The Impact of Digital Transformation on the Future of Labour in Vietnam

The pervasive proliferation of digital technologies, such as Artificial Intelligence (AI), Big Data, and cloud computing, is catalyzing profound transformations within the global labour market. In this context, digital transformation does not merely alter the methods of production organization but also comprehensively restructures the relationship between labour, technology, and knowledge. From the perspective of historical materialism, the development of the productive forces is intrinsically linked to the advancement of science and technology and the evolution of social labour proficiency. As Karl Marx pointed out, the development of the instruments of labour and scientific-technical progress inevitably alters the essence of the labour process and the occupational structure of society (Marx, 1976).

In the digital economy, this law is vividly manifested through the transition from simple labour to knowledge-based and creative labour. The impacts brought about by digital transformation are characterized by a dialectical duality—encompassing both positive and negative dimensions—while simultaneously presenting an array of new challenges and opportunities for labourers, enterprises, and the government.

One of the most palpable impacts of digital transformation is the restructuring of the labour market. Automation and Artificial Intelligence (AI) are increasingly displacing repetitive tasks while simultaneously generating new occupations rooted in knowledge and data. According to research by Erik Brynjolfsson and Andrew McAfee, digital technology is driving a "Second Machine Age," in which intelligent systems can execute numerous cognitive tasks that were previously the sole province of human beings (Brynjolfsson & McAfee, 2014). The World Economic Forum (2023) reports that approximately 44% of core skills in the global workforce will change by 2027, with many traditional jobs facing the risk of obsolescence due to automation technology.

However, this process also catalyzes a surge in demand for emerging fields such as data analytics, AI engineering, cybersecurity expertise, digital platform management, and automated systems design. Digital platforms have unlocked employment opportunities for freelancers and workers within the Gig Economy—an economic model characterized by the dominance of short-term, flexible, and informal engagements. Laborers can now easily secure freelance contracts, work remotely, or provide services via online applications. Furthermore, digital technology automates workflows, optimizes production, and bolsters labour efficiency. By dismantling geographical barriers, the digital economy enables Vietnamese labourers to access global employment opportunities through online platforms. In its *World Employment and Social Outlook 2021* report, the International Labour Organization (ILO) noted that the number of digital labour platforms worldwide has increased fivefold over the past decade (VOV.VN, 2021). Guy Ryder, then Director-General of the ILO, remarked: "Digital labour platforms are opening up opportunities that did not exist before, particularly for women, young people, persons with disabilities, and marginalized groups in all parts of the world" (VOV.VN, 2021).

In Vietnam, this trend is becoming increasingly pronounced as digital economic sectors—such as e-commerce, information technology, and platform services—undergo rapid expansion. According to reports by Google, Temasek, and Bain & Company (2023), Vietnam's digital economy reached a scale of approximately \$30 billion in 2023 and is projected to hit \$45 billion by 2025, triggering a substantial demand for a digitally-skilled workforce.

Criteria	Traditional Industrial Economy	Digital Economy
Nature of Occupation	Assembly-line production, repetitive administrative tasks	Data analytics, software development, digital platform management
Instruments of Labour	Mechanical machinery, physical production systems	Digital platforms, Artificial Intelligence (AI), Big Data
Skill Requirements	Basic technical skills / Manual proficiency	Digital literacy, creative thinking, data analytical capabilities
Labour Flexibility	Fixed-location labour / On-site employment	Remote work, platform economy (Gig economy)
Value Creation Source	Physical/Material labour	Knowledge and Data

Table: Comparative Analysis of Labor Structure in Traditional and Digital Economies

Furthermore, the risk of the middle-income trap within the context of digital transformation is exerting a powerful influence on the labour market. In the digital era, the middle-income trap is no longer merely an issue of GDP growth; rather, it represents a stagnation in the developmental level of the productive forces. For developing nations, digital transformation serves as both a catalyst and a challenge. Without timely upgrades to technological standards and human resource quality, an economy may succumb to the "middle-income trap." According to research by Barry Eichengreen, nations ensnared in this trap often experience sluggish productivity growth due to a lack of technological innovation and low-quality human

capital (Eichengreen, Park, & Shin, 2014). In the digital age, this risk becomes increasingly pronounced as the technological divide between nations widens. The World Bank (2016) notes that economies capable of effectively harnessing digital technology achieve significantly higher productivity growth rates compared to those that are slow to transition.

For Vietnam, a failure to promptly upgrade the constituent elements of the productive forces would result in a "desynchronization" with global value chains and a loss of competitive advantage. Specifically, domestic scholarship has warned that without enhancing scientific-technological levels and human resource quality, the economy will remain dependent on low-value-added outsourcing industries. Consequently, the national productive forces will become obsolete, inevitably leading to a decline in social labour productivity and posing a threat to economic security in the context of digital globalization. Nguyen Duc Thanh (2021) asserts that digital transformation must be viewed as a vital driver for Vietnam to escape the middle-income trap by enhancing productivity and fostering innovation. Persisting with a growth model based on labour-intensive simple work will leave Vietnam trapped in low-value segments, where such processes are highly susceptible to robotization (Nguyen Phu Trong, 2022).

3.3. Current Realities of Digital Transformation's Impact on the Future of Digital Human Resources in Vietnam

Amidst the robust global momentum of digital transformation, this process has been exerting a profound and far-reaching impact on the labour market and employment landscape in Vietnam. This evolution not only catalyzes the creation of novel job opportunities and bolsters labour productivity but also presents formidable challenges regarding skill requirements, occupational structures, and labourers' welfare.

Presently, Vietnam's comparative advantage lies in its abundant workforce, with over 50 million individuals of working age. The Vietnamese labour force is increasingly characterized by high proficiency and a keen aptitude for applying scientific and technological achievements to production. Vietnamese people demonstrate high adaptability and a strong predisposition for lifelong learning. Regarding the Fourth Industrial Revolution, the Vietnamese workforce has shown the capacity to rapidly assimilate new trends; in addition to mobilizing internal resources, they effectively inherit and integrate research outcomes from developed nations. Particularly, within the context of a flourishing digital economy, Vietnam's labour market has undergone significant shifts in both structure and quality. This transition is vividly evidenced by the substantial increase in the proportion of trained labourers in recent years, as follows:

Qualification Level	2020	2021	2022	2023	2024	2025
Total (%)	24.05	26.12	26.40	27.20	28.10	29.20
Primary Vocational Training	4.71	6.78	7.10	6.20	6.40	5.60
Intermediate Vocational Education	4.40	4.11	3.70	4.20	4.40	4.80

Qualification Level	2020	2021	2022	2023	2024	2025
College / Associate Degree	3.82	3.57	3.70	4.00	4.10	3.60
University Degree and Higher	11.12	11.67	11.90	12.70	13.20	15.20

(Source: General Statistics Office of Vietnam, 2020–2025)

The proportion of labourers employed in the Information and Communication Technology (ICT) sector has experienced stronger growth compared to previous years, reflecting the rapid expansion of digital economic sectors such as e-commerce, logistics, and digital finance. According to reports from the Ministry of Information and Communications, by 2024, Vietnam had approximately 73,788 digital technology enterprises, with over 1.26 million employees working in the ICT field. The total revenue of the sector reached approximately \$158 billion, a year-on-year increase of over 10%. This demonstrates that digital technology enterprises are becoming the core force driving the process of digital transformation and the formation of novel occupations within the economy (Ministry of Information and Communications, 2020–2025).

It can be affirmed that digital transformation offers immense opportunities for labour and employment in Vietnam, particularly as the nation accelerates its digital transition. Flexible working arrangements, such as freelancing and gig labour via digital platforms like Grab and ShopeeFood, have attracted millions of participants, especially young labourers in major urban centers. Accordingly, the digital economy is generating millions of new jobs in fields such as e-commerce, information technology, and digital technical services. Research by Nhi Anh indicates that "Vietnam's e-commerce sector grew by over 30% during the 2020–2025 period. By 2025, the value of Vietnam's digital economy is projected to reach \$57 billion, with e-commerce accounting for \$39 billion. By 2030, the digital economy could reach \$220 billion, with e-commerce contributing approximately \$150 billion" (Nhi Anh, 2022).

However, the most significant constraint regarding digital human resources in Vietnam is the skills gap between the requirements of the digital economy and the actual capacity of the workforce. Extensive research indicates that the majority of the Vietnamese labour force possesses only rudimentary technological skills, such as proficiency in office software or simple online applications. Conversely, foundational skills for the digital economy—including data analytics, Artificial Intelligence (AI), and programming—remain critically scarce. Consequently, with over 70% of the labour force lacking vocational or technical training by 2025, Vietnam faces the risk of being excluded from high-value-added segments. According to digital transformation research reports, more than 60% of Vietnamese labourers lack advanced digital skills, particularly in fields such as Big Data, AI, and cybersecurity.

Compared to other Southeast Asian nations, the proportion of high-skilled labour in Vietnam accounts for only about 11% of the total workforce, which is significantly lower than that of several regional peers, such as Malaysia or the Philippines.

Country	Proportion of High-Skilled Labour (%)
Malaysia	29%
Philippines	18%
Thailand	14%
Vietnam	~11%

(Source: Southeast Asia Digital Human Resources Report 2025)

Figure: Comparative Analysis of High-Skilled Labour Proportions in Selected Southeast Asian Nations

This skills gap indicates that without a suitable human resource development strategy, Vietnam risks falling behind in the global technological race. One of the most daunting challenges in the context of digital transformation is the risk of job displacement, as automation and Artificial Intelligence (AI) increasingly substitute for manual or repetitive tasks. According to the Ministry of Labour, Invalids and Social Affairs, "The impact of the Fourth Industrial Revolution presents nascent issues; numerous traditional jobs and skills will vanish or sharply decline, while many novel roles and competencies will emerge; AI, robotics, and machinery will play an ever-expanding role in production, replacing many current positions" (Ministry of Labour, Invalids and Social Affairs, 2022). Specifically, the International Labour Organization (ILO) forecasts that "85% of labourers in Vietnam's textile and garment industry are at risk of being replaced by machines and technologies of the Fourth Industrial Revolution" (Le Tien Truong, 2019). According to Tran Dinh Thien (2025): If the proportion of labourers with advanced digital skills does not reach a breakthrough threshold (above 20%) within the next five years, social labour productivity will fail to achieve a qualitative leap, leaving the nation unable to break its dependence on traditional labour-intensive models.

The aforementioned empirical data highlights a compelling reality: while the digital transformation process in Vietnam is accelerating, the quality of human resources—particularly the digital competencies and skills of the workforce—has yet to fully satisfy the imperatives of the new economy. The disparity between the developmental pace of the digital economy and the technical proficiency of the labour force is engendering an objective contradiction within the developmental process. It is precisely this contradiction that necessitates a radical innovation in thinking and policy within the realm of education and training, aimed at cultivating digital human resources compatible with the requirements of the productive forces in the digital age. Therefore, developing digital human resources is not merely a provisional solution but has become an objective historical necessity of the current socio-economic developmental process.

3.4. Strategic Solutions for Developing Digital Human Resources in Vietnam to Meet Labour Market Demands Amidst Digital Transformation

The development of digital human resources is not only a central task in the national digital transformation process but also the decisive factor for Vietnam's competitiveness in the new era. Specifically, to resolve the dialectical contradiction between the developmental stage of modern productive forces and the current capacity of the workforce, the process of "re-conceptualization" must be operationalized into the following strategic solution groups:

First, fundamentally and comprehensively innovating the education and training system towards digital skill development. In the context of robust digital transformation, education and training must be regarded as the foundational solution for cultivating digital human resources. From the philosophical perspective of the productive forces, scientific and technological advancements inevitably necessitate an elevation in the proficiency of the labourer. As digital technology becomes an integral component of modern productive forces, the education and training system must undergo a corresponding evolution to meet the imperatives of the digital economy.

It is essential to innovate training content and methodologies to ensure a tight alignment with labour market demands in the digital age. Curricula should prioritize the development of core digital competencies, including data-driven thinking, technological proficiency, programming, data analytics, and cybersecurity. Furthermore, fostering soft skills such as creative thinking, problem-solving, and adaptability to flexible work environments has become a critical requirement. Amidst digital transformation, higher education must "shift from traditional training models to those integrated with innovation and digital technology" (Nguyen Van Binh, 2021). This underscores that educational reform aims not only to provide specialized knowledge but also to empower learners with the creative capacity to master technology. Additionally, the digitalization of education should be vigorously promoted through the development of online learning platforms and flexible training models, thereby expanding access to knowledge for the entire workforce.

Second, perfecting policy institutions and the legal framework for the digital labour market. To develop digital human resources sustainably, it is imperative to construct and refine a policy system aligned with the requirements of the digital economy. The State must assume the role of a "facilitator" to ensure that the relations of production pave the way for the development of digital productive forces. Specifically, the State should enact policies that incentivize digital skill training and development for labourers, while creating favourable conditions for enterprises to participate in human resource cultivation. It is necessary to formulate a national strategy for digital human resource development integrated with the digital economy development strategy. This strategy must clearly define specific goals, roadmaps, and solutions to elevate the digital proficiency of the workforce. Furthermore, investment in education, scientific

research, and innovation within the digital technology sector must be strengthened. The establishment of innovation hubs, high-tech zones, and technological startup ecosystems will contribute to a conducive environment for the growth of digital human resources.

Currently, labourers in the digital economy constitute a significant portion of Vietnam's workforce, yet their rights are often inadequately protected. Consequently, the State must promptly perfect the legal framework and establish policies to safeguard the rights of workers within digital economic models such as the Gig economy. This includes regulations on social insurance, occupational safety, and other fundamental benefits for freelancers operating on digital platforms like Grab, Gojek, and ShopeeFood. This aligns with the Prime Minister's directive to "continue reviewing and perfecting the legal framework, mechanisms, and policies related to the labour market; promptly rectify limitations and inadequacies; and gradually align with international standards and global practices to ensure the labour market operates safely, stably, synchronously, and efficiently" (Prime Minister, 2022). Policies protecting labour rights will foster security and bolster productivity. Additionally, there must be mechanisms to attract and utilize digital talent, such as establishing knowledge-intensive zones or implementing superior preferential policies to retain leading experts in fields like AI, Big Data, and Semiconductors.

Third, promoting the "State – Academia – Industry" triple helix model. It is essential to establish collaborative programs between the government, enterprises, and educational institutions to provide digital skill courses and practical employment opportunities. Furthermore, creative spaces, such as technological startup hubs, should be cultivated to support business ideas grounded in digital technology. This "State – Academia – Industry" synergy will ensure resource mobilization and synchronous coordination in labour training and digital job development. While initiatives like the "Make in Vietnam" campaign have yielded preliminary successes, their scale must be expanded to meet the burgeoning demands of the digital economy.

Fourth, accelerating the development of technological infrastructure and digital connectivity. This entails investing in the construction and expansion of digital technical infrastructure, particularly in rural and disadvantaged areas, to ensure that all labourers have equitable access to digital economic platforms. Concurrently, efforts should be made to achieve universal internet coverage and reduce information technology costs for the workforce. Strengthening technological infrastructure serves as a critical mechanism for mitigating the digital divide between different regions.

Fifth, developing an innovation and technological startup ecosystem to create a conducive environment for the effective growth and utilization of digital human resources. Technological enterprises, particularly innovative startups, play a pivotal role in generating novel employment opportunities and driving the evolution of digital human capital. The State should implement supportive policies for tech startups, incentivize investment in Research and Development (R&D), and foster collaboration between

enterprises, research institutes, and universities. The establishment of robust innovation ecosystems will provide a fertile environment for digital human resources to unleash their creative potential and contribute meaningfully to the digital economy's developmental process.

CONCLUSION

In the developmental trajectory of human history, the evolution of the productive forces has been inextricably linked to scientific-technological progress and the advancement of social labour proficiency. As we enter the era of digital transformation, the explosion of technologies such as Artificial Intelligence (AI), Big Data, the Internet of Things (IoT), and cloud computing is precipitating profound shifts in the structure of the global economy. These technologies do not merely alter the instruments of labour; they comprehensively restructure the production process, thereby giving rise to novel forms of labour grounded in knowledge, data, and digital technology. Within this context, modern productive forces are increasingly characterized by the synthesis of digital technology, scientific knowledge, and high-skilled human resources.

Drawing upon the Marxist-Leninist perspective on productive forces, this study demonstrates that digital transformation is driving a pivotal shift from a production model based on simple labour to one predicated on knowledge and data. Throughout this transition, human resources serve not only as a constituent element of the productive forces but increasingly emerge as the central factor determining labour productivity, innovative capacity, and economic competitiveness. The formation of digital human resources—characterized by digital skills, creative capacity, and technological adaptability—is the essential condition for effectively harnessing scientific and technological achievements within the digital economy.

For Vietnam, the digital transformation process presents significant opportunities to bolster labour productivity, foster innovation, and progressively deepen its integration into global value chains. However, reality also reveals that the rapid expansion of the digital economy is exposing an objective contradiction between the imperatives of modern productive forces and the current proficiency and skills of the workforce. If this gap is not promptly addressed, it could become a barrier to enhancing economic competitiveness and heighten the risk of lagging behind amidst increasingly fierce global technological competition.

From the perspective of productive force development, it can be affirmed that the cultivation of digital human resources is the decisive condition for ensuring commensurability between human beings and the means of production in the digital era. This necessitates that Vietnam vigorously accelerates the transformation of its education and training systems, perfects the institutional framework for the digital labour market, and constructs an innovation ecosystem that fosters a conducive environment for the development and efficient utilization of high-quality human resources.

Thus, as digital transformation emerges as an irreversible developmental trend in the global economy, the development of digital human resources must be regarded as a pivotal strategy in the nation's industrialization and modernization process. Only by building a workforce with advanced digital proficiency, innovative capacity, and the ability to adapt to rapid technological fluctuations can Vietnam effectively harness the opportunities presented by digital transformation. This will ultimately facilitate a qualitative leap in the development of the productive forces and elevate the nation's economic standing in the era of the knowledge-based economy.

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THE IMPACT OF LEADERSHIP STYLE ON EMPLOYEE STRESS LEVELS IN ALBANIA

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Abstract

The psychological situation of employees and work-related stress are among the main concerns related to the performance and success of organizations today. An organization's culture and leadership are considered important elements in employee well-being and their psychological state. This paper aims to further investigate a possible relationship between leadership style and the level of stress of employees in Albanian organizations. The type of research conducted is quantitative and the number of participants is 126, of which 121 girls and 25 boys from different sectors of organizations in Albania. From the data collected, it results that there is a significant positive relationship between the Authoritarian leadership style and the level of stress, which means that with the increase in the presence of the characteristics of the authoritarian leadership style, the level of stress of the employees also increases. Meanwhile, from the analysis of the data, it also results that there is a significant negative relationship between the Democratic leadership style and the level of stress, which means that with the increase in the presence of the characteristics of the democratic leadership style, the level of stress of the employees decreases. This study serves as a good information base for organizations in Albania, but not limited to, to reiterate the importance of employees' psychological health in organizational success, identifying elements with negative and positive impact on it to further provide adequate and effective addressing methods. Reducing the use of the authoritarian style and increasing the use of elements such as open communication, support and participation as part of democratic leadership can help improve the employee's workplace stress situation.

Keywords: Leadership, Workplace Stress, Employee Psychological health.

INTRODUCTION

Work and the dynamics associated with it occupy a significant portion of people's time. The environment in which people interact to develop their careers affects various aspects of their lives and health. People still spend a good part of their day working, even though the number of working hours has been decreased over the last 150 years (Giattino, Ortiz-Ospina, & Roser, 2020). Various studies have proven and emphasized the importance and impact of the work environment on people's well-being. Since the beginning of psychology studies, Freud in 1930 wrote that: "Love and work are the cornerstones of our humanity" (Phronetic Psychotherapy, 2025), emphasizing that work and love are central for mental health. Over the years, studies have deepened and re-proved that work is closely related to the psychological health of the individual, showing that a pleasant work environment brings positive effects on psychological well-being and vice versa (Blustein, 2008). Fast forward to today, where supporting the well-being and psychological health of employees constitutes one of the most important and current strategies for organizations worldwide (World Economic Forum, 2025), and is ranked in the top 5 trends shaping the future of work in 2025 (International Institute for Management Development, 2025).

At the same time, Leadership constitutes a crucial element in the culture of an organization, which significantly influences the dynamics in the workplace. The way leaders set priorities, communicate, and act has a direct impact on the culture of the organization (Akinpelu, 2024). An organization's culture has a direct and major impact on job satisfaction, employee behavior, and overall well-being (Tiwari, 2025), due to its essential role in shaping work life within an organization. As a result, leadership constitutes an element of considerable value and significance in influencing the psychological well-being of employees. Various studies show that leadership style affects the psychological well-being and stress levels of employees in the organization (Alsadan & Alhaiou, 2025).

Based on statistics from recent years in the international situation, a significant increase in the level of stress among employees is noted due to workplace dynamics. The peak of the increase in workplace stress worldwide was reached in 2020, following the COVID-19 pandemic (Gutmann, 2024). According to a study conducted to identify the main concerns of employees in the workplace in 18 different countries, it results, that in the first place of employee concerns in almost all 18 countries is workplace stress (OHS Canada, 2025). Also, according to recent studies in America, 77% of employees declare that they have been stressed at work in the last month, and 57% of them declare that they have experienced burnout due to workplace stress (De Jager, 2025).

Meanwhile, in Albania, according to a Gallup report, it turns out that 46% of employees experience daily workplace stress, and 42% of them are considering leaving their current job and are constantly looking for a new job (Vox, 2024).

Given the importance of these two elements (leadership and workplace stress) in organizational success, the current situation of psychological health of employees worldwide, but specifically in Albania, as well as a limited number of studies conducted in this field in the Albanian context, this study aims to quantitatively study the relationship and impact of leadership styles on the workplace stress level of employees in Albania. Results generated can be used to better analyze the role of leadership styles on employees' psychological well-being and further address the situation of workplace stress, in order to attain more successful organizational results.

1. LITERATURE REVIEW

1.1 Leadership and Leadership styles theories

According to the APA dictionary, leadership is defined as: “the processes involved in leading others, including organizing, directing, coordinating, and motivating their efforts toward achieving certain group or organizational goals. Leadership tends to be reciprocal (leaders influence followers, and followers influence leaders), transactional (leaders and followers exchange their time, energies, and skills to increase their joint rewards), transformational (leaders inspire and motivate followers), and cooperative rather than coercive (followers voluntarily accept the leader’s suggestions)” (APA Dictionary of Psychology, 2018). Also, in other definitions, it is specified that leadership is not necessarily related to a title, management role, or personal attributes (Kruse, 2013). Leadership is a complex process through which individuals are motivated towards achieving common goals. As such, this process has different forms through which it can be addressed, which in the literature are known differently as leadership styles. There are various theories in the literature through which leadership is further analyzed into styles.

One of the pioneering theories in this field is that of Kurt Lewin, based on research conducted in 1939. According to this theory, three main leadership styles were identified: authoritarian leadership (autocratic), participative leadership (democratic), and delegative leadership (laissez-faire) (Leadership & Performance Partners, 2024).

The authoritarian leadership style implies the completion of the process by the leader with determination and authority. The leader in this case focuses on the division of tasks and giving clear instructions. Leaders with this leadership style are separated from employees, make decisions independently, and control employees. One of the advantages of this leadership style is the explanation of the rules and clear expectations that increase efficiency and productivity (Bendersky, 2023). At the same time, this type of leadership limits creativity and leads to a lack of cooperation with the staff. This leadership style is usually recommended in crisis situations, where the need for quick and decisive decisions arises (Leadership Success).

The democratic leadership style is characterized by support and cooperation between the leader and employees. In terms of decision-making, in this case the leader is the one who makes the final decision, but is open to discussion, to get ideas and to accept and understand the team's perspective. According to Lewin's study, the democratic leadership style is more successful, compared to the other two styles (Leadership & Performance Partners, 2024). The advantages of this leadership style are that employees feel more involved, there is creativity and cooperation in the team. According to studies, this leadership style brings an improved work environment and lower employee turnover (Bendersky, 2023). However, in emergency cases in decision-making, this leadership style is considered less advantageous than the authoritarian one.

The laissez-faire leadership style is characterized by a liberal leader who interferes little in the work of employees and gives rare directions. According to Lewin's study, this type of leadership brought little progress in the work process and problems mainly related to taking responsibility and blaming among team members for unsuccessful decisions (Leadership & Performance Partners, 2024). This type of group can be advantageous and effective when it consists of highly qualified experts, highly motivated employees, and a high level of trust between the leader and other team members (Leadership Success, n.d.).

According to Lewin's theory, there was not a leadership style that had to be followed all the time; rather, leadership had to be adapted to different situations by the leader to ensure successful results in every circumstance. Lewin's theory is largely appreciated for its clear and simplified, yet valuable, model for explaining leadership, making it more practical and adaptable to different contexts. However, discussions about this theory often refer to the difficulties that leaders may encounter in selecting and changing leadership styles according to situations (Oakwood International , 2025).

1.2 Workplace stress theories

Workplace stress defined by the World Health Organization, is: "The response people may have when presented with work demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope" (World Health Organisation, 2003). To further clarify, employees experience stress that, in this case, originates and comes as a consequence of the dynamics related to the work in which they are engaged. Numerous theories and studies have been conducted to further understand the causes associated with workplace stress, the influencing elements, and effective methods of addressing it.

One of the most fundamental theories to explain the workplace stress that occurs in employees is the job demands-control (support) model, introduced by Robert Karasek in 1979. This theory consists of two main elements: demand and control (Mulder, 2022). Demand is related to all the different demands that are addressed to employees regarding work, including time of completion, various tasks, commitment and its

forms, etc. While control refers to the level of control that employees have over their work and tasks, as well as the autonomy to decide on the way the work is carried out. The core idea in Karasek's theory is that workplace stress does not stem from the demands of the job in various positions per se, but rather results from the combination of job demands with the level of control offered to employees (Fila, 2016). According to the diagram created to explain this theory, based on combinations of the level of demand and the level of control, four types of jobs result, which are associated with different levels of job stress for employees: low-strain jobs, high-strain jobs, passive jobs, and active jobs (Mulder, 2022).

Low-strain jobs are characterized by low demands and high flexibility and control for employees. These types of jobs often become routine, due to low demands and employees who are not motivated by any new challenges. High-strain jobs, on the other hand, are characterized by high demands and low levels of control. In this case, the jobs are very demanding and do not allow flexibility or autonomy for employees, instructing them in every detail about what and how they should do it, as a result, the stress levels experienced by employees in this case are very high. In passive jobs the level of demand is low and also the level of control is low, meaning that these are passive job positions with fixed and repetitive procedures. In this case the level of stress experienced at work is expected to be lower than all other combination categories. Active jobs are characterized by a high level of demand, but also a high level of control. Despite the high level of demand, these jobs do not tend to be associated with significant levels of work-related stress because they allow employees to have control over their tasks. In these positions, employees are faced with new challenges and are motivated to approach them positively in order to succeed.

This theory was later revised and another important element was added: workplace support. This element was seen as an intervening factor in the combinations explained above and their stress-related outcomes. For example, in a high-strain job, the results related to the stress experienced in these jobs were exaggerated if at the same time workplace support was also missing (Fila, 2016). This important element refers to the support that employees receive within the work environment mainly from supervisors or leaders but also from colleagues.

This theoretical model has stood the test of time and serves as a good basis for a deeper understanding of workplace stress and its addressing, although it does not provide answers to all issues related to workplace stress and requires further research (Towler, 2020). Various studies conducted subsequently and other theories developed that can be attached to this theory explain the main causes of workplace stress.

According to The National Institute of Health, the top 5 causes of stress at work are: nature of the job, management practices, working conditions, financial factors and life events (Bhui, Dinos, Galant-Miecznikowska, De Jongh, & Stansfeld, 2016).

1.3 Leadership styles' impact on workplace stress-related studies

Numerous studies conducted in different countries around the world have shown a significant relationship between leadership style and employee stress levels. By conducting research of various types, based on diverse theories and instruments, the overall results show that different leadership styles have an impact on employee stress levels, whether positive or negative, depending on the style.

In a LinkedIn study, 63% of participants reported that poor leadership or management was the most significant cause of workplace stress (Crestcom, 2024). Also, according to the State of Workforce Mental Health Report for 2025, one of the four main factors of workplace stress is lack of support from the manager (Lyra, 2025). Leadership, therefore has a significant impact on workplace stress, and the forms of addressing this process carry their own importance. Support, for example, is an element that is not present in each of the leadership styles, but it is important to be present to ensure the psychological well-being of employees. From this, it is understood that the leadership style used affects the dynamics of employee workplace stress.

Another study further specifies elements of leadership style that negatively affect the psychological state of employees and cause workplace stress: unrealistic demands, lack of support, unfair treatment, low decision latitude, lack of appreciation, effort–reward imbalance, conflicting roles, lack of transparency, and poor communication (Bhui, Dinos, Galant-Miecznikowska, De Jongh, & Stansfeld, 2016). The way a leader carries out his or her duties affects in one way or another the work and daily life of employees, and since this takes up a good portion of time and importance in people's lives, it is also reflected in their mental health.

According to a 2025 study, servant and transformational leadership styles are significantly associated with lower levels of employee stress (Alsadan & Alhaiou, 2025). The findings also show that job stress mediates the impact of leadership style on employee performance. In another recent study, the results show that the autocratic leadership style increases employee stress levels, the charismatic style improves the work environment climate by reducing employee stress levels. Meanwhile, the democratic style indirectly reduces employee stress (Aslan, Sönmez, & Deniz, 2025). Although in different forms, leadership styles have a significant impact on the level of stress experienced by employees at work, which is worth taking into consideration when designing policies and strategies that support the psychological health of employees, the well-being and success of the organization.

1.4 Albanian context

In the Albanian context, there is a lack of a broad literature base to address this topic. However, there are related studies that yield valuable results in the field. In one of the similar studies conducted on the impact of leadership style on the performance and stress level of high school teachers, it results that for these

employees, the authoritarian leadership style increases the workplace stress level and it also results that at a considerable level teacher in Albania were not satisfied with the leadership style in their workplace, and generally experience high levels of workplace stress (Ferit, 2016). However, this study is focused on only one profession and was conducted several years ago. Current studies similar to the topic of this paper are almost absent in scientific research in Albania.

2. METHODOLOGY

This paper aims to study through quantitative methods the impact of leadership styles on the stress level of employees in Albania. The 2 main hypotheses of the study are:

Hypothesis I: "The type of leadership affects the level of stress at work of employees of organizations in Albania."

Hypothesis II: "The democratic leadership style is associated with lower levels of stress of employees of organizations in Albania".

This study was conducted with a sample of 126 people, of whom 101 were girls and 25 were boys. To collect data, two standardized international instruments were used to identify the leadership style of leaders through employee reporting and the stress level of employees in organizations in Albania. To measure the stress scale was used "The Workplace Stress Scale", which serves to measure the level of stress at work among employees of different organizations (8 questions rated with 1-5 points from "never" to "always"). To identify the leadership style, the "Leadership Styles Questionnaire" was used, which serves to determine the type of leadership followed by a leader (18 questions rated according to the Likert scale from "strongly disagree" to "strongly agree").

The data collected from the questionnaires were analyzed with the SPSS statistical program, to generate results related of this study. This paper provides empirical data with scientific value on the impact of leadership style on employee stress levels in Albania. Through questionnaires, data are extracted, with secondary importance in this study, on the most frequent leadership style in organizations in Albania as well as the general level of stress experienced at work by Albanian employees. This scientific information can be useful for organizations in Albania to have a deeper understanding of the current general situation of leadership, stress at work and the impact of leadership style on employee stress, to compare with their specific situation and to make the necessary revisions towards improvement.

3. RESULTS

To obtain results related to this study, descriptive data analysis was performed and the relationship between variables was tested through regression analysis. The relevant tables and descriptions are presented below.

A total of 126 individuals participated in this study, of which 101 were female and 25 were male. The questionnaire was completed by employees in various cities of Albania such as: Vlora, Durrës, Tirana, Shkodra, Elbasan, Pogradec, Fieri, Lezha and Librazhd but with a significantly higher concentration in the city of Tirana, of 81% of the participants. The age group of employees who participated in the study ranges from 18-24 to 55+, with a higher density for the 25-34 age group, of 36.5%. Participants come from positions in various work sectors such as: Private Companies (Business), Public Sector (State), Educational Institutions, Non-Profit Organizations (NGOs), Financial Institutions (Banks & Insurance), Self-Employment / Freelancer, Media & Entertainment, International Organizations, among which the Private Companies (Business) sector has the highest percentage of participants of 56.3%.

Table 1

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Vlorë	4	3.2	3.2	3.2
Tiranë	102	81.0	81.0	84.1
Pogradec	9	7.1	7.1	91.3
Durrës	3	2.4	2.4	93.7
Librazhd	3	2.4	2.4	96.0
Lezhë	1	.8	.8	96.8
Shkodër	2	1.6	1.6	98.4
Fier	1	.8	.8	99.2
Elbasan	1	.8	.8	100.0
Total	126	100.0	100.0	

The participants of this study work in different cities of Albania, noting according to the descriptive analysis of the data related to this factor. The majority of the sample were residents of the city of Tirana, 81%. The second city with the most participants was Pogradec, 7.1%, while the other cities have a distribution from 1 to 4 participating individuals.

Table 2

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Private Companies (Business)	71	56.3	56.3	56.3
Public Sector (State)	19	15.1	15.1	71.4
Educational Institutions	20	15.9	15.9	87.3
Non-Profit Organizations (NGOs)	5	4.0	4.0	91.3
Financial Institutions (Banks & Insurance)	6	4.8	4.8	96.0

Self-Employment Freelancer	3	2.4	2.4	98.4
Media & Entertainment	1	.8	.8	99.2
International Organizations	1	.8	.8	100.0
Total	126	100.0	100.0	

According to the descriptive analysis of the employment sector of the participants, it results that 56.3% of them are hired in private companies, 15.1% are hired in public sector, 15.9% are hired in educational institutions, 4% are hired in non-profit organizations, 4.8% are hired in financial institutions, 2.4% are self-employment or freelancer, 0.8% are hired in media & entertainment and 0.8% are hired in international organizations.

Table 3: Descriptive Statistics of Workplace Stress Level

	N	Minimum	Maximum	Mean	Std. Deviation
SUM_StresiTotal	127	8.00	36.00	18.6693	6.69287
Valid N (listwise)	127				

In the The Workplace Stress Scale questionnaire for the variable "Workplace Stress", from the points collected in total by participants, the minimum value achieved was 8 points, the maximum value achieved was 36 points with an average of 18.6 points and a standard deviation of 6.69.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.522 ^a	.272	.255	5.77811

a. Predictors: (Constant), SUM_LaissezfaireTotal, SUM_AutoritarianTotal, SUM_DemokratikTotal

From the regression analysis of the data between the dependent variable: "Employee Stress Level" and the independent variables: "Authoritarian Leadership, Democratic Leadership and Laissez-Faire Leadership") it results that: With a value of $R=0.522$, there is a medium to strong relationship between leadership styles and stress. The model (Leadership styles analyzed together) explains 27.2% of the variance of the variable "Employee Stress Level", which is a considerable value to explain relationships of importance in the social sciences.

Table 5: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1537.558	3	512.519	15.351	.000 ^b
	Residual	4106.553	123	33.387		
	Total	5644.110	126			

a. Dependent Variable: SUM_StresiTotal

b. Predictors: (Constant), SUM_LaissezfaireTotal, SUM_AutoritarianTotal, SUM_DemokratikTotal

With $p < 0.01$ the Anova results indicate that the regression model is statistically significant and leadership styles together explain a significant portion of variance in employee stress levels.

Table 6: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	22.464	4.194		5.356	.000
	SUM_AutoritarianTotal	.546	.150	.283	3.637	.000
	SUM_DemocraticTotal	-.539	.142	-.372	-3.784	.000
	SUM_Laissez-faireTotal	-.099	.172	-.056	-.574	.567

a. Dependent Variable: SUM_StresiTotal

From the regression analysis between the variables of the questionnaire, it results that in this study two of the leadership styles are statistically significant: Authoritarian Leadership with $\beta = 0.546$ and $p < 0.001$, and Democratic Leadership with $\beta = -0.372$ and $p < 0.001$. Since the beta value is positive for the Authoritarian leadership style, this indicates that with the increase in the scores in the authoritarian leadership style, the stress level of the employees increases. Meanwhile, the beta value is negative for the Democratic leadership style, and this indicates that with the increase in the scores in the democratic leadership style, the stress level of the employees decreases.

The Laissez- Faire leadership styles do not express a significant relationship with the stress level of the employees in this sample.

CONCLUSION

Based on the literature review and the findings generated from the collection and analysis of data in this study, it is concluded that the leadership style used in an organization has a significant impact on the stress level of employees.

Hypothesis I: "The type of leadership affects the level of stress at work of employees of organizations in Albania."

Since the model (Leadership styles analyzed together) explains 27.2% of the variance of the variable "Employee Stress Level, by the regression analysis conducted in this research, the hypothesis I of this study is confirmed.

Based on the literature review, since the types of leadership create different work cultures and have an effect on demand and control in an organization, they are closely related and directly affect the psychological state of employees, including the level of stress. Poor management and little support from leaders are cited as the main reasons for stress at work by employees in several studies worldwide. Employees tend to feel psychologically calmer and less stressed when they feel understood, supported, and not pressured by the leader. The results of this study support the literature by further emphasizing that even in the Albanian context, the authoritarian leadership style has a negative effect on the psychological health of employees by increasing the level of work-related stress. The authoritarian approach to staff, the lack of support, the creation of a supportive and safe environment for experimentation, the lack of participation in decision-making, the form of communication, etc., which characterize authoritarian leadership, may be among the influencing factors that increase the level of employee stress. Meanwhile, the democratic leadership style has a positive effect on the mental health of employees by reducing the level of stress related to their work. Creating a supportive atmosphere, space and freedom for new thoughts and ideas, participation in decision-making, the form of open and friendly communication, are elements that characterize democratic leadership and may be positive factors in reducing the level of employee stress.

Hypothesis II: "The democratic leadership style is associated with lower levels of stress of employees of organizations in Albania".

With $\beta = -0.372$ and $p < 0.001$ as a high significance resulted for Democratic Leadership from the regression analysis of the variables, the second hypothesis of this study is confirmed.

Regarding the Laissez-faire leadership style, although in various studies conducted in the same field this leadership style is often associated with higher levels of stress due to the lack of presence, support, organization, etc. on the part of the leader, in this study, the relationship between the laissez-faire leadership style and the level of work-related stress for the studied sample is not significant. It is important to understand that the way a company is run and how the leader communicates, interacts, and collaborates with employees has a significant impact on the mental health of employees, specifically stress levels, which directly impacts the performance and success of the organization. Leadership is an important factor to consider if we want to increase employee well-being, their performance, efficiency in performing tasks, and organizational success. Organizations in Albania may consider reviewing their leadership style

if their employees are experiencing significant levels of stress at work, because increasing the democratic approach, can help positively improve the situation and reduce the level of stress experienced by employees.

RECOMMENDATIONS

It is recommended that in future similar studies a larger sample size be used so that the results obtained are more general and descriptive of the situation

It is recommended to conduct more extensive studies on each of the types of leadership and how they affect employee stress in Albania.

It is recommended that separate studies be conducted on the impact of leadership style on the stress level of employees for different job profiles.

It is recommended that in future similar studies, intervening variables in addition to the dependent and independent variables be studied and considered, in order to study in more depth the dynamics of the influence of leadership style on the stress level of employees.

It is recommended to conduct studies that combine quantitative and qualitative methods on the same topic, in order to generate more complete information to draw results and conclusions.

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HUMAN HAPPINESS AND THE VISION OF A HAPPY NATION: RETHINKING HUMAN-CENTERED DEVELOPMENT IN A FRAGMENTED WORLD

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Abstract

Amid growing global inequalities, geopolitical tensions, and social fragmentation, traditional development paradigms centered primarily on economic growth are increasingly questioned. In response, scholars and policymakers are exploring alternative frameworks that place human well-being and happiness at the core of development. This paper examines the concept of human happiness as a guiding principle for national development and explores the vision of a “happy nation” as an emerging paradigm for human-centered development in a fragmented world. Drawing on interdisciplinary perspectives from development studies, social philosophy, and cultural analysis, the study employs a qualitative research methodology combining conceptual analysis, policy analysis, and comparative review of international well-being frameworks. The paper analyzes theoretical debates on happiness and human-centered development while examining Vietnam’s development discourse and policy orientation toward building a happy nation. The findings suggest that the vision of a happy nation reflects a shift from growth-centered development to a more integrated model that combines economic progress with cultural development, social cohesion, and human flourishing. In the context of increasing global fragmentation, this approach highlights the importance of placing human well-being at the center of development strategies. The paper contributes to ongoing international debates on alternative development paradigms by proposing a culturally grounded perspective on human happiness as a normative and strategic objective of national development.

Keywords: human happiness; happy nation; human-centered development; cultural development; global fragmentation.

INTRODUCTION

For much of the modern period, national development has been represented through the language of economic expansion. Gross domestic product (GDP), productivity, industrialization, and income per capita became the dominant signs by which governments and international institutions assessed progress. This approach had a strong practical foundation: expanding production can reduce material deprivation, finance public services, create employment, and enlarge the resources available for social development. Nevertheless, the elevation of growth from an important means into an almost self-sufficient end has produced a narrower picture of human progress. GDP records the monetary value of production, but it does not directly reveal whether people are healthy, secure, respected, socially connected, culturally rooted, or able to live meaningful lives.

Contemporary conditions make this limitation increasingly visible. Economic interdependence has generated unprecedented opportunities, but its benefits and risks are unevenly distributed. Geopolitical conflicts, climate pressure, technological disruption, public-health crises, declining institutional trust, and the fragmentation of social life expose vulnerabilities that aggregate income cannot adequately describe. A society may become wealthier while experiencing greater loneliness, anxiety, inequality, ecological loss, or distrust. Conversely, communities with moderate incomes may sustain important sources of well-being through social solidarity, cultural continuity, public services, and confidence in institutions. These contrasts require a conception of development capable of connecting material advancement with the quality and meaning of human life.

The intellectual foundations for such a shift are already substantial. Sen (1999) defines development as the expansion of substantive freedoms rather than the accumulation of commodities alone. The human-development approach similarly understands progress as enlarging people's choices and capabilities (United Nations Development Programme [UNDP], 2025). Research on subjective well-being has demonstrated that how people evaluate and experience their lives provides policy-relevant knowledge that cannot be inferred completely from objective indicators (Organization for Economic Co-operation and Development [OECD], 2025). Meanwhile, Bhutan's Gross National Happiness (GNH), the OECD Well-being Framework, and the World Happiness Report have made happiness and multidimensional well-being increasingly visible in public policy.

However, an important research gap remains. Existing approaches illuminate different components of a good society, yet they do not automatically constitute a coherent philosophy of national development. HDI is deliberately concise and concentrates on health, education, and income. The OECD framework is broad and analytically rich, but it was designed primarily as a measurement architecture rather than a culturally grounded national ideal. World Happiness Report rankings are based on life evaluation and analyze major explanatory conditions, yet life evaluation alone cannot exhaust the ethical, cultural, and

institutional meaning of a happy society. GNH integrates culture, ecology, governance, and psychological well-being, but its origins in Bhutan require careful contextual translation rather than mechanical replication. The unresolved problem is therefore not simply how to add another happiness indicator to GDP, but how to integrate objective conditions, subjective experience, social relations, culture, and institutional capability into a nationally meaningful framework.

This paper addresses that problem through the following question: How can human happiness be systematically integrated into development as both a normative objective and an analytical framework? It argues that a “happy nation” should be understood neither as a promise of permanent positive emotion nor as a substitute for economic development. It is a human-centered development orientation in which public institutions expand the material, social, cultural, and psychological conditions that enable people to flourish. On this basis, the paper proposes an integrated framework consisting of four mutually dependent dimensions: economic sustainability, social cohesion, cultural vitality, and subjective well-being.

The contribution is threefold. First, the paper distinguishes a happy-nation approach from a happiness ranking by grounding it in a normative account of human flourishing. Second, it synthesizes insights from human development, multidimensional well-being, and culturally embedded approaches while identifying their limits. Third, it interprets Vietnam as a relevant case in which rapid economic transformation, a strong social orientation, cultural continuity, and the constitutional language of “Independence–Freedom–Happiness” create both an opportunity and a test for translating happiness into development governance.

This orientation is particularly relevant to middle-income societies. Once extreme deprivation is reduced, citizens’ expectations increasingly concern service quality, fairness, environmental conditions, voice, security, work–life balance, and opportunities for self-development. Development governance must therefore become more responsive at the same time that it becomes more productive. The happy-nation perspective provides a vocabulary for that qualitative transition.

2. LITERATURE REVIEW AND THEORETICAL POSITIONING

2.1. The achievements and limits of growth-centered development

Economic growth remains indispensable, particularly for countries that must reduce poverty, improve infrastructure, and expand access to health and education. The problem lies not in measuring production, but in assuming that production is an adequate proxy for human flourishing. The Commission on the Measurement of Economic Performance and Social Progress emphasized that what is measured influences what governments pursue and argued for shifting attention from production toward people’s well-being, distribution, and sustainability (Stiglitz et al., 2009). This distinction is crucial because averages

can conceal inequality and because present consumption may be financed by the depletion of social or natural resources.

The Easterlin paradox provided an early empirical challenge to the simple equation of income and happiness. Easterlin (1974) observed that richer individuals within a society often report greater happiness, while long-term economic growth does not necessarily generate a corresponding rise in average happiness. Subsequent research has debated the strength and universality of this finding, and income clearly matters when it relieves deprivation. Yet the enduring theoretical insight is that the relationship is mediated by expectations, social comparison, security, health, relationships, and institutions. Income is a resource for living; it is not identical to the quality of living.

Growth-centered governance may also produce a category error. Means such as output, technology, and investment become treated as ends, whereas people are implicitly reduced to “human capital” serving production. A human-centered approach reverses this relation: economic institutions are judged by the freedoms and capabilities they make possible. This does not reject efficiency. It places efficiency within a wider evaluative field that includes equity, dignity, participation, resilience, and intergenerational responsibility.

2.2. Human development, capabilities, and flourishing

The capability approach supplies a strong normative foundation for moving beyond GDP. Sen (1999) differentiates resources from capabilities: equal resources may yield unequal real opportunities because people face different personal, social, and environmental circumstances. Development should therefore be evaluated through the substantive freedoms people possess to achieve valued “beings and doings.” Nussbaum (2011) further develops this orientation by defending central capabilities connected to life, health, practical reason, affiliation, bodily integrity, and control over one’s environment.

The Human Development Index operationalized part of this shift by combining life expectancy, education, and income. Its importance lies in its public message: national success cannot be reduced to income. Yet HDI is a summary measure of average achievement in only three dimensions, and UNDP supplements it with indices on inequality, gender, multidimensional poverty, and planetary pressures (UNDP, 2025). This family of measures shows both the strength and limitation of composite indices. They make neglected dimensions visible, but no single number can represent the full plurality of a good human life.

Human flourishing also has relational and cultural conditions. Capabilities are exercised within families, communities, institutions, languages, and inherited systems of meaning. Freedom cannot be understood only as isolated individual choice; it also depends on whether people have trustworthy relationships,

public voice, recognition, and a livable environment. A happy-nation framework must consequently combine individual agency with the social conditions that sustain it.

2.3. Happiness and multidimensional well-being frameworks

Bhutan's GNH is the clearest national attempt to institutionalize an alternative to GDP. Its index includes nine domains: psychological well-being, health, education, time use, cultural diversity and resilience, good governance, community vitality, ecological diversity and resilience, and living standards (Oxford Poverty and Human Development Initiative [OPHI], n.d.). Its major strength is integrative: subjective and objective elements are connected with culture, ecology, community, and governance. GNH demonstrates that happiness can inform planning rather than remain an exclusively private concern. Its limitation for international application is precisely its cultural embeddedness. The relevant lesson is not to reproduce Bhutan's indicators unchanged, but to recognize that development frameworks require philosophical coherence and contextual legitimacy.

The OECD Well-being Framework offers another important model. It covers eleven dimensions of current well-being and four resources for future well-being: economic, natural, human, and social capital. It also emphasizes distribution by asking not only whether life is improving, but for whom (OECD, 2024). This structure corrects three weaknesses of GDP: it is multidimensional, distribution-sensitive, and concerned with sustainability. Its extensive indicator set, however, can function more readily as a dashboard than as a unifying national vision. Policymakers still need principles for managing trade-offs among dimensions.

The World Happiness Report places subjective evaluation at the center. Its international ranking is based on the Cantril Ladder, through which respondents evaluate the quality of their life on a scale from zero to ten (Wellbeing Research Centre, 2026). Analysis commonly considers GDP per capita, social support, healthy life expectancy, freedom to make life choices, generosity, and perceived corruption. This approach establishes that happiness is measurable and socially structured. It also highlights the importance of trust, belonging, and social connection. Nevertheless, a single life-evaluation question is better understood as an essential outcome indicator than as a complete theory of development. Cultural response patterns, adaptation to hardship, and the difference between momentary affect, life satisfaction, and meaning must remain analytically visible.

The OECD's updated guidance distinguishes three components of subjective well-being: life evaluation, affect, and eudaimonia, understood as meaning and purpose (OECD, 2025). This differentiation is particularly valuable for a happy-nation framework. A person can experience negative emotion while pursuing a meaningful life; people can also report satisfaction after adapting to unjust conditions.

Subjective data must therefore be interpreted together with objective rights, capabilities, and social conditions.

2.4. Research gap and analytical proposition

The comparison reveals a fragmented field. Human development clarifies capabilities but only partially measures lived experience and culture. OECD indicators achieve breadth but do not by themselves supply a culturally grounded normative center. World Happiness Report data capture life evaluation but cannot independently determine whether institutions are just or opportunities are adequate. GNH provides integration and cultural depth, but it cannot be transferred without adaptation.

This paper advances the proposition that a happy nation requires vertical and horizontal integration. Vertical integration connects values, institutions, policies, indicators, and citizens' lived experience. Horizontal integration connects economic, social, cultural, and subjective dimensions so that progress in one domain is not purchased through systematic damage to another. Happiness then becomes both an end and a diagnostic principle: an end because development should enable worthwhile lives, and a diagnostic principle because changes in lived well-being can reveal failures that aggregate economic indicators miss.

3. METHODOLOGY

The study uses a qualitative, exploratory, and interdisciplinary research design. Its purpose is conceptual synthesis and framework construction rather than causal testing. Three methods are combined.

First, conceptual analysis examines the meanings assigned to development, happiness, well-being, capabilities, and human flourishing. It distinguishes happiness as affect from life evaluation and from the broader institutional conditions of a good life. This step prevents the happy-nation concept from being reduced to mood or rhetorical aspiration.

Second, comparative framework analysis examines four influential approaches: HDI and human development, Bhutan's GNH, the OECD Well-being Framework, and the World Happiness Report. They were selected because they represent distinct but complementary logics: capabilities and basic achievements; culturally embedded multidimensional governance; objective and subjective well-being dashboards; and internationally comparable life evaluation. Each framework was assessed through five questions: What is its unit of evaluation? Which dimensions are included? How are objective and subjective information combined? How are distribution and sustainability addressed? How directly can findings inform policy?

Third, policy-oriented case analysis considers Vietnam. The case is not presented as proof that a complete happy-nation model already exists. It is used to examine how an emerging human-centered orientation interacts with a national history, cultural context, development institutions, and rapid economic change. Official development orientations, international reports, and accepted policy formulations were read alongside the comparative frameworks.

The analysis proceeds abductively. Concepts from the literature guide comparison, while recurring limitations in the frameworks generate the four-dimensional synthesis. The resulting model is evaluated for normative coherence, policy relevance, cultural adaptability, and measurability. Because the paper does not conduct a primary survey or econometric test, its conclusions concern conceptual and institutional design. Empirical validation of indicators remains a subsequent research task.

4. FINDINGS AND DISCUSSION

4.1. From material sufficiency to multidimensional flourishing

The first finding is that the transition beyond GDP should not be framed as a choice between growth and happiness. Such a binary is misleading. Material sufficiency is a foundational condition of well-being, especially where households face poverty, insecure employment, inadequate housing, or limited access to services. The necessary transition is from growth as the dominant end to growth as one coordinated means within a multidimensional system.

This distinction changes policy evaluation. A project that raises output but displaces communities, worsens pollution, or undermines health has mixed rather than automatically positive development value. Conversely, spending on preventive health, public space, cultural institutions, or social care may contribute substantially to national flourishing even when its benefits are imperfectly represented in short-term GDP. The happy-nation perspective therefore asks both how much an economy produces and what forms of life that production sustains.

The comparative analysis also shows that objective and subjective indicators must correct one another. Objective indicators protect evaluation against adaptation to deprivation: low expectations should not legitimize poor health care, discrimination, or unsafe work. Subjective indicators protect evaluation against technocratic blindness: high income and service provision do not guarantee that people experience dignity, trust, belonging, autonomy, or meaning. A credible framework needs both.

4.2. Social cohesion is productive infrastructure

The second finding is that social cohesion is not a secondary cultural benefit created after economic development; it is a form of infrastructure that makes development possible. Trust reduces the costs of cooperation, supports compliance with legitimate rules, and strengthens collective responses to crises.

Social support protects individuals against shocks that income alone cannot absorb. Participation increases the informational quality and legitimacy of public decisions.

This relational insight is especially important in a fragmented world. Polarization, misinformation, loneliness, and declining confidence in institutions can weaken well-being even where material conditions improve. World happiness research repeatedly associates social support, freedom, generosity, and perceptions of corruption with differences in life evaluation (Wellbeing Research Centre, 2026). The policy implication is not that governments can manufacture friendship. It is that institutions can create or destroy the conditions for trustworthy association through fairness, transparency, accessible services, inclusive public spaces, and meaningful participation.

Social cohesion must nevertheless be distinguished from enforced uniformity. A cohesive society is not one without disagreement. It is one in which differences can be negotiated through trusted institutions, equal status, and a shared commitment to nonviolence and the common good. Policies that silence diversity may create superficial stability while weakening dignity and long-term trust. Hence cohesion should be measured through inclusion, reciprocity, institutional confidence, social support, and constructive participation.

4.3. Culture is a constitutive dimension, not decoration

The third finding concerns cultural vitality. Many international frameworks acknowledge culture only indirectly, although GNH explicitly includes cultural diversity and resilience. Yet people interpret happiness through languages, moral traditions, family relations, collective memory, spirituality, and ideas of a worthwhile life. Culture does not merely add color to development; it shapes the ends people value and the relationships through which they pursue them.

A culturally grounded model avoids two opposite errors. Universalism without context may impose standardized indicators that ignore local meanings. Cultural relativism may protect practices that diminish capabilities or equal dignity. The appropriate approach is dialogical: universal commitments to human dignity, basic capabilities, and participation should be interpreted through public reasoning within particular societies. Cultural continuity should also remain open to creativity, diversity, and change.

This has practical implications. Cultural vitality can be assessed through access to cultural life, preservation and creative renewal of heritage, language diversity, intergenerational transmission, freedom of cultural expression, and the perceived meaningfulness of community life. It also affects resilience. Communities with shared narratives, rituals, and mutual obligations may mobilize collective action more effectively during disruption. At the same time, cultural policy must ensure that belonging does not become exclusion.

4.4. Vietnam as an emerging human-centered trajectory

Vietnam offers a relevant setting for this synthesis. Its modern political vocabulary places “Independence–Freedom–Happiness” at the head of official documents, symbolically connecting national sovereignty, human freedom, and the purpose of public authority. The country’s development experience also demonstrates the transformative value of economic growth: poverty reduction, expanded infrastructure, education, health provision, and international integration have enlarged the capabilities of millions. A happy-nation approach should preserve these achievements rather than oppose them.

At the same time, rapid transformation generates new questions concerning inequality, environmental quality, work pressure, demographic change, social protection, cultural continuity, and the distribution of opportunity. Vietnam’s National Green Growth Strategy states that green growth places people at the center, reduces vulnerability to climate change, encourages responsibility to community and society, and supports a civilized society in harmony with nature (Prime Minister of Vietnam, 2021). This formulation illustrates how economic modernization, ecological responsibility, and human-centered values can be connected.

The Vietnamese case also highlights the importance of culturally situated social well-being. Family and community relations, solidarity, educational aspiration, respect for cultural heritage, and confidence in collective development are significant resources. They should not be romanticized or treated as substitutes for rights and effective services. Rather, they should be recognized as social and cultural assets whose condition can be monitored alongside income, health, education, environmental quality, and subjective well-being.

Recent international evidence makes the issue concrete. Vietnam ranked 46th in the World Happiness Report 2025, while national orientations emphasize social security, health, education, quality of life, and higher human-development performance (Government News, 2026). A ranking alone neither proves nor disproves the existence of a happy nation. It provides one comparative signal. The deeper task is to develop a national system that can explain which groups flourish, which are left behind, how objective conditions relate to lived experience, and whether present achievements are sustainable.

The case analysis therefore supports a cautious conclusion: Vietnam possesses important normative language, development achievements, social resources, and policy directions for a happy-nation trajectory, but the concept needs operational definition. Without an integrated indicator and governance architecture, “happiness” risks remaining an inspirational slogan. With such an architecture, it can become a discipline for evaluating trade-offs and aligning policy with human flourishing.

5. AN INTEGRATED HAPPY-NATION FRAMEWORK

The proposed framework consists of four interdependent dimensions. They are deliberately broader than isolated indicators and narrower than an unlimited list of desirable outcomes. Together they connect material conditions, relationships, meaning, and lived evaluation.

5.1. Economic sustainability

Economic sustainability concerns the capacity to secure decent and resilient material conditions across generations. It includes adequate income, productive and meaningful work, housing, access to essential services, economic security, equitable opportunity, and ecological responsibility. The term “sustainability” signals that present well-being must not be purchased through unsustainable debt, resource depletion, or environmental damage.

Distribution is central. Average income can rise while vulnerable groups face insecurity. Indicators should therefore be disaggregated by region, gender, age, socioeconomic status, disability, and other relevant characteristics. The question is not only whether national resources grow, but whether people have real and stable access to the conditions necessary for agency and dignity.

5.2. Social cohesion

Social cohesion includes interpersonal trust, institutional trust, social support, fairness, safety, participation, inclusion, and the capacity to cooperate across differences. It connects micro-level relationships with macro-level institutions. This dimension recognizes that individuals flourish through relations and that legitimate institutions are themselves determinants of well-being.

Possible measures include the availability of someone to rely on, perceived fairness, confidence in public institutions, volunteering and mutual assistance, civic participation, exposure to discrimination, safety, and loneliness. The aim is not to maximize conformity, but to strengthen reciprocal belonging and equal participation.

5.3. Cultural vitality

Cultural vitality concerns the ability of individuals and communities to inherit, create, interpret, and participate in systems of meaning. It includes cultural access, heritage preservation, creative expression, pluralism, intergenerational transmission, ethical orientation, and a sense of identity compatible with respect for others.

This dimension makes the model culturally adaptable. National and local communities should participate in defining relevant indicators. Nonetheless, cultural claims must be examined against dignity, equality, and substantive capability. Vital culture is living and dialogical; it cannot be reduced to the static preservation of artifacts.

5.4. Subjective well-being

Subjective well-being records how people experience and evaluate their lives. Following OECD guidance, it should include life evaluation, affect, and eudaimonic elements such as meaning and purpose (OECD,

2025). Measures should be collected consistently, disaggregated, and interpreted alongside objective conditions.

This dimension gives citizens' experience an explicit place in governance. If services improve statistically while trust or life satisfaction declines, policymakers receive an early warning requiring investigation. Subjective data should not be used to blame individuals for unhappiness or to obscure structural disadvantage. Its function is to deepen institutional responsiveness.

5.5. Governance and operationalization

The four dimensions should operate through a policy cycle. First, public deliberation defines national values and desired outcomes. Second, an indicator dashboard combines objective and subjective measures and reports inequalities rather than averages alone. Third, major policies are assessed for their expected effects across all four dimensions. Fourth, periodic evaluation examines outcomes and unintended trade-offs. Fifth, findings inform budgeting, local experimentation, and policy revision.

This architecture avoids the false precision of collapsing all dimensions into one number. A headline index may assist communication, but a dashboard is required for diagnosis. The framework also proposes a "no systematic sacrifice" principle: short-term improvement in one dimension should not depend on persistent harm to another or to a particular population group. Trade-offs cannot always be eliminated, but they should be transparent, publicly justified, monitored, and corrected.

For Vietnam, operationalization could begin through pilot studies at provincial or municipal level. Existing statistical data on income, health, education, employment, environment, and social protection could be combined with standardized surveys of life evaluation, affect, meaning, trust, support, cultural participation, and perceived fairness. Participatory consultation would identify culturally relevant indicators. Independent academic review and public reporting would strengthen credibility. Over time, the system could inform socioeconomic planning and the appraisal of major programs.

The framework's analytical novelty lies in the relationship among its dimensions. Economic sustainability supplies material capabilities; social cohesion supplies relational capability and institutional trust; cultural vitality supplies identity and meaning; subjective well-being supplies experiential feedback. None is sufficient alone. Their interaction converts a list of indicators into a theory of human-centered national development.

5.6. Policy implications and safeguards

Adopting happiness as a policy objective creates opportunities, but it also requires safeguards. The first is conceptual clarity. Governments should not equate happiness with optimism, social compliance, or the absence of criticism. Dissatisfaction may be a rational response to injustice and an important source of democratic learning. A happy-nation policy must protect voice and treat critical feedback as evidence

rather than failure. Its appropriate ambition is to create enabling conditions for flourishing, not to prescribe how every citizen should feel.

The second safeguard is plural measurement. A single composite score is attractive because it simplifies communication, but it may conceal compensations that are ethically unacceptable. Severe deterioration in environmental quality, for example, should not disappear statistically because income rises. A tiered reporting system is preferable: a concise set of headline outcomes for public communication; a multidimensional dashboard for policy diagnosis; and disaggregated indicators for detecting inequality. Thresholds can identify minimum conditions below which performance in one dimension cannot be compensated by gains elsewhere.

Third, happiness governance should be connected to ordinary institutions rather than assigned to an isolated symbolic agency. Statistical authorities can ensure methodological quality; planning and finance agencies can integrate well-being outcomes into appraisal and budgeting; sectoral ministries can specify operational targets; local authorities can test context-sensitive interventions; universities can provide independent evaluation; and civic organizations can communicate lived experience. Clear institutional responsibility prevents happiness from becoming a ceremonial objective without implementation capacity.

Fourth, policy appraisal should examine distribution and time. A national average may improve while young people, older persons, migrants, rural communities, or low-income households deteriorate. Present satisfaction may also depend on practices that transfer environmental or fiscal costs to future generations. Every major assessment should therefore ask: Who benefits? Who bears the costs? Are effects reversible? What resources for future well-being are being accumulated or depleted? This aligns happiness with justice and sustainability rather than short-term approval.

Fifth, the framework favors policy coherence. Employment policy affects income, time use, family life, health, and meaning. Urban planning affects mobility, safety, environmental quality, cultural access, and social connection. Digital policy affects opportunity but also attention, trust, privacy, and mental health. Evaluating such interactions can reveal co-benefits. Accessible green public spaces, for instance, can simultaneously support health, ecological quality, cultural activity, and community connection. The purpose of the framework is thus not to create a separate “happiness sector,” but to improve coordination across existing sectors.

Finally, international comparison should support learning without producing rank-driven policy. Rankings can stimulate attention, but countries differ in history, demographics, cultural response patterns, and

institutional capacity. Vietnam should compare trends over time, disparities within the country, and performance against transparent national goals, while using international benchmarks as external reference points. The success of a happy-nation framework lies not primarily in moving upward on a league table, but in whether evidence changes priorities, improves accountability, and expands the real capabilities of people whose needs are otherwise overlooked.

CONCLUSION

This paper has argued that the crisis of growth-centered development is not a crisis of economic growth itself, but of its elevation into an insufficient measure and purpose of national progress. Material advancement remains essential, yet it becomes genuinely developmental only when it expands human capabilities, strengthens just social relations, sustains cultural meaning, protects future conditions, and improves peoples lived experience.

The comparative review demonstrates that major alternatives each provide indispensable insights. Human development centers capabilities; GNH integrates culture, ecology, governance, and psychological well-being; the OECD framework supplies multidimensional and distribution-sensitive measurement; and the World Happiness Report makes lived evaluation internationally visible. Their limitations point toward the need for integration rather than the selection of a single superior index.

In response to the research question, human happiness can be systematically integrated into development when it performs two roles. Normatively, it identifies human flourishing as the ultimate purpose of development. Analytically, it organizes objective and subjective evidence about whether institutions actually enable worthwhile lives. The proposed framework operationalizes these roles through economic sustainability, social cohesion, cultural vitality, and subjective well-being, linked by participatory and accountable governance.

Vietnam illustrates both the promise and challenge of this orientation. Its development achievements, social values, cultural resources, and human-centered policy language provide a foundation for a happy-nation vision. Yet the transition from vision to governance requires precise concepts, credible indicators, disaggregated evidence, policy assessment, and public participation. Happiness must become a standard for examining development, not a celebratory label attached to it.

The study is limited by its conceptual design and reliance on secondary sources. It does not test causal relationships or establish indicator weights. Future research should conduct stakeholder consultation, construct a Vietnam-specific indicator set, pilot subjective well-being modules, and examine regional and demographic differences. Comparative empirical testing can then evaluate whether the proposed dimensions predict sustainable improvements in human flourishing. A happy nation, understood in this disciplined sense, is not a nation without suffering or disagreement. It is a nation whose institutions continually expand people's real opportunities to live secure, meaningful, socially connected, and dignified lives.

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The Future of Health: AI and Human Well-Being

PRECISION CARE AND DATA-DRIVEN HEALTH SYSTEMS

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Abstract

Background: Precision care increasingly depends on data-driven health systems capable of transforming routine clinical data into actionable knowledge. The integration of artificial intelligence (AI), interoperable health records, genomics, and digital monitoring tools requires a structured Learning Health System (LHS) framework to ensure sustainability, safety, and equity across populations.

Methods: A structured narrative review of peer-reviewed literature, regulatory guidance, and large-scale implementation reports published between 2019–2026 was conducted. Sources included randomized controlled trials evaluating AI-based interventions, genomics implementation studies, interoperability standards documentation (particularly FHIR-based systems), and governance frameworks such as the EU AI Act, the European Health Data Space (EHDS), and FDA guidance.

Data & Methodology: The review synthesizes findings from multicenter AI trials, biobank-scale genomics datasets, wearable-based pragmatic digital health studies, and real-world evidence frameworks. Emphasis was placed on evaluation standards (CONSORT-AI, TRIPOD+AI), interoperable data models, and lifecycle governance mechanisms supporting responsible AI-enabled systems.

Results: AI-enabled precision interventions demonstrate promising clinical performance; however, real-world effectiveness depends on robust interoperable data architecture, clinician engagement, workflow integration, and equity monitoring. Large-scale genomics and wearable initiatives show scalability potential but highlight constraints related to governance, adoption, and economic sustainability.

Discussion: The literature indicates that technical accuracy alone is insufficient for sustainable precision care. Institutional capacity for continuous evaluation, regulatory compliance, bias mitigation, and secure data exchange determines long-term impact.

Recommendations: The strategic priority is establishing a resilient learning ecosystem that integrates interoperable data systems, structured evaluation frameworks, multidisciplinary collaboration, and governance-by-design, positioning UNI to advance research excellence and promote responsible AI adoption within regional health systems.

Keywords: Precision Care; Data-Driven Health Systems; Artificial Intelligence; Learning Health System; Digital Health Governance; Health Data Policy.

INTRODUCTION

Precision care has evolved from genomics-centered stratification toward multimodal, AI-enabled health systems integrating EHRs, real-world evidence (RWE), imaging analytics, and digital biomarkers (Collins & Varmus, 2015; Esteva et al., 2019; Topol, 2019). Early precision medicine emphasized genotype–phenotype correlation and biomarker-guided therapeutics (Ashley, 2016).

Between 2019 and 2026, three major developments accelerated transformation.

First, large-scale interoperable clinical datasets enabled predictive modeling beyond experimental contexts (Rajkomar et al., 2019; Mandel et al., 2016). Population biobanks and genomics consortia expanded risk prediction models (Manolio et al., 2019). Digital biomarkers from wearable technologies strengthened continuous monitoring frameworks (Steinhubl et al., 2015; Goldsack et al., 2020).

Second, AI evaluation standards matured. Early retrospective models showed high bias risk (Wynants et al., 2020). Updated reporting standards such as CONSORT-AI and SPIRIT-AI improved transparency (Liu et al., 2020; Cruz Rivera et al., 2020). TRIPOD+AI strengthened prediction model reporting (Collins et al., 2021).

Third, regulatory oversight shifted toward lifecycle governance. The FDA proposed adaptive AI regulation under Total Product Lifecycle models (FDA, 2019), while the EU implemented horizontal risk-tiered governance via the AI Act and EHDS (European Commission, 2022).

I. LEARNING HEALTH SYSTEM MODEL

The Learning Health System (LHS) operates through continuous feedback loops: data capture, analysis, knowledge generation, implementation, and outcome reassessment.

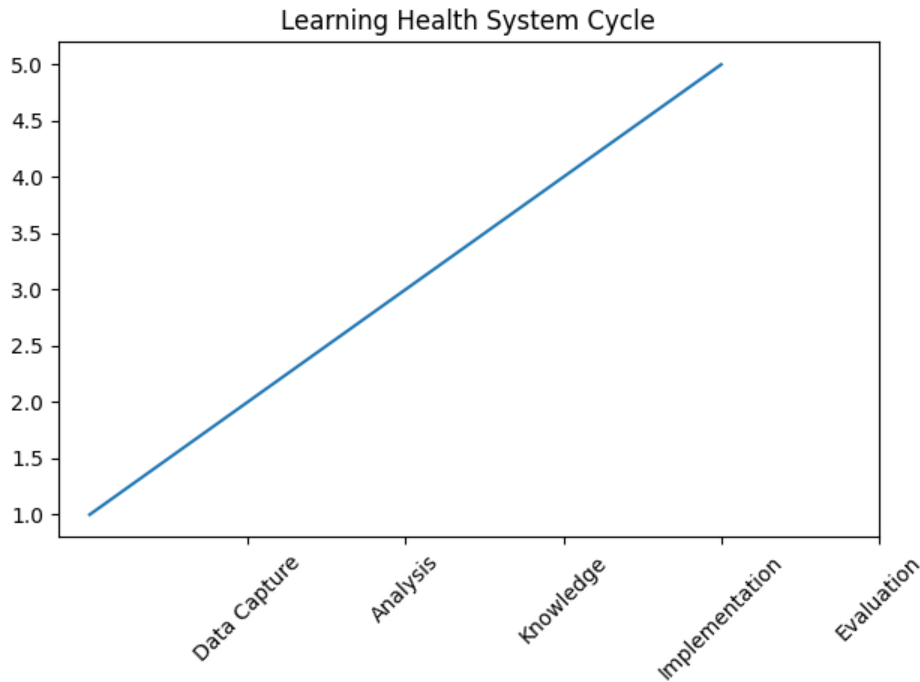


Figure 1. Learning Health System Feedback Cycle.

3. Regulatory Comparison (U.S. vs EU)

Between 2019 and 2026, AI governance in precision care evolved through two distinct regulatory models.

United States

In the U.S., oversight is led by the U.S. Food and Drug Administration (FDA), which regulates AI systems as Software as a Medical Device (SaMD). The framework emphasizes a Total Product Lifecycle (TPLC) approach, including premarket review, controlled algorithm updates, and post-market performance monitoring. The focus is primarily on device-level safety, effectiveness, and real-world monitoring.

European Union

The EU applies a broader, system-level framework through the EU Artificial Intelligence Act and the European Health Data Space (EHDS). Healthcare AI is generally classified as high-risk, requiring conformity assessments, risk management systems, transparency, and human

oversight. EHDS further strengthens interoperability and cross-border data governance.

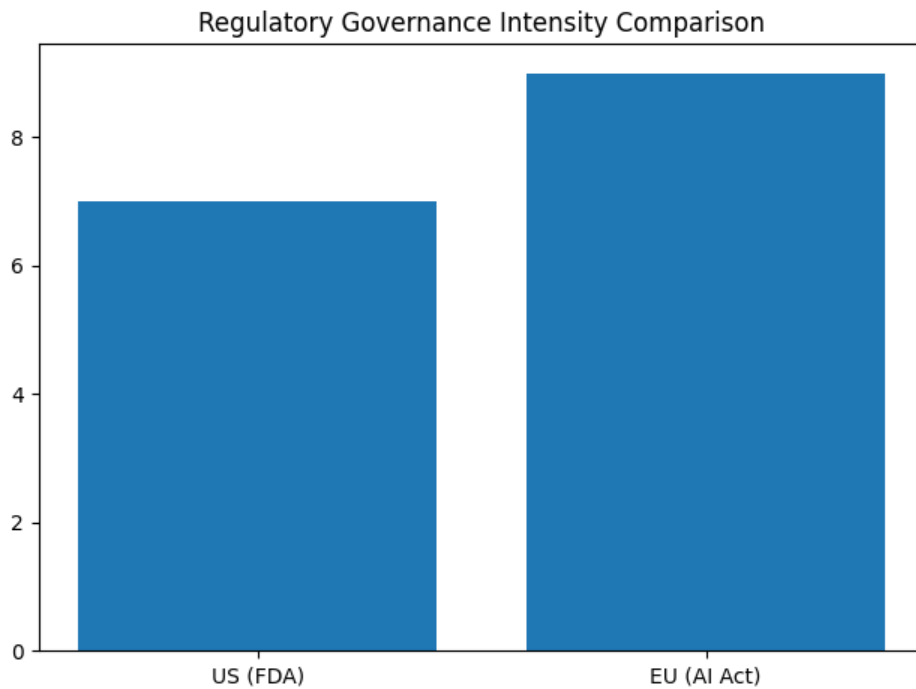


Figure 2. Comparative Governance Emphasis.

4. AI Evaluation Maturation

AI evaluation evolved from retrospective discrimination metrics toward multidimensional validation including calibration, bias auditing, drift detection, and prospective trials.

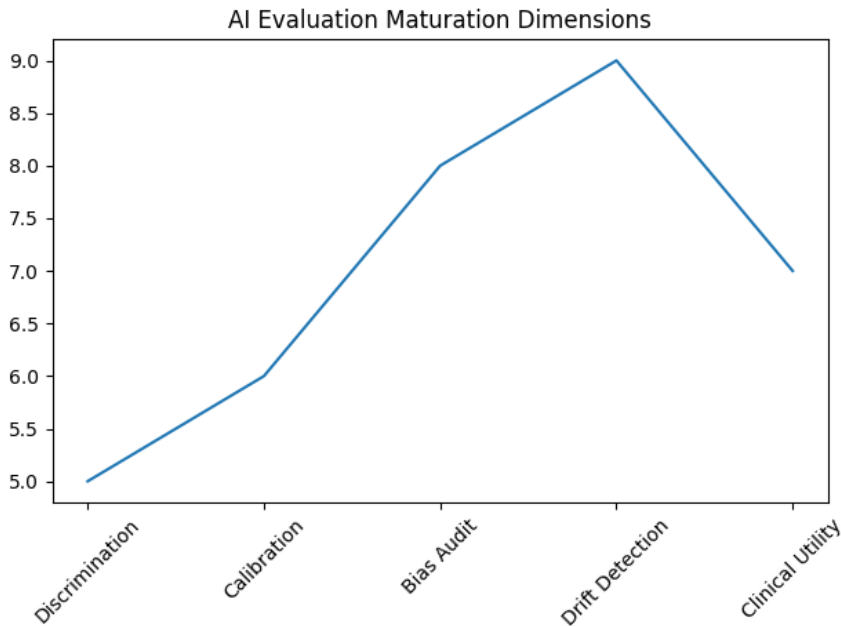


Figure 3. Multidimensional AI Evaluation Stack.

2. DISCUSSION AND DATA ANALYSIS BASED ON LEARNING HEALTH SYSTEM LITERATURE

The presented Learning Health System (LHS) cycle (Data Capture → Analysis → Knowledge → Implementation → Evaluation) illustrates a linear representation of what is conceptually a recursive and adaptive feedback architecture. While the visual model shows a progressive increase across stages, literature consistently emphasizes that the LHS is cyclical rather than sequential (Institute of Medicine, 2013; Friedman et al., 2017). The analytical value of this figure lies in structuring system performance across five measurable domains.

2.1 Data capture

Empirical research demonstrates that data quality and interoperability directly influence downstream analytic validity. Rajkomar et al. (2019) show that predictive model generalizability decreases significantly in environments with fragmented EHR architectures. Institutions with standardized coding systems and interoperable data exchange frameworks exhibit stronger model reproducibility and lower error variance. Therefore, the first stage functions as a structural determinant of the entire cycle.

From a systems perspective, variability introduced at this stage propagates through subsequent phases, amplifying bias and calibration instability if not controlled.

2. Analysis

The transition from raw data to predictive modeling has evolved from single-metric discrimination analysis toward multidimensional validation. Wynants et al. (2020) documented high risk of bias in early COVID-19 prediction models due to inadequate validation frameworks. Contemporary standards require:

1. External validation
2. Calibration assessment
3. Fairness stratification
4. Drift detection

This maturation reflects a shift from algorithmic performance optimization to clinical reliability assessment.

3. KNOWLEDGE GENERATION

In the LHS framework, knowledge is not merely statistical output but clinically actionable interpretation. Decision-curve analysis and implementation science metrics increasingly bridge predictive analytics with practical decision-making (Topol, 2019). Literature suggests that predictive tools without embedded workflow integration show significantly lower adoption rates, regardless of technical accuracy.

Thus, knowledge translation becomes a bottleneck if governance and clinician engagement are weak.

4. IMPLEMENTATION

Implementation science evidence indicates that model deployment success correlates strongly with institutional readiness, governance oversight, and workforce literacy. Benjamens et al. (2020) observed that regulatory-cleared AI systems do not automatically achieve clinical penetration without structured implementation strategies.

This stage is highly sensitive to organizational culture and regulatory compliance capacity.

5. RECOMMENDATION Institutional Roadmap for UNI

To align with global developments in precision care and Learning Health System (LHS) architectures, UNI should implement a structured institutional roadmap that integrates technological capacity, governance maturity, and academic innovation.

First, UNI should prioritize the development of a modular and interoperable digital infrastructure aligned with international standards (e.g., FHIR-based data exchange). Interoperability maturity is foundational for scalable AI integration, enabling secure data sharing, structured clinical datasets, and research-grade analytics environments.

Second, the institution should establish staged AI validation pathways, moving from retrospective validation to prospective pilot testing and monitored clinical deployment. Evaluation protocols should include calibration assessment, bias auditing, drift detection, and performance stratification across demographic subgroups. This ensures methodological rigor and safeguards clinical safety.

Third, the implementation of equity monitoring dashboards is essential. These dashboards should track algorithmic performance across gender, socioeconomic status, geographic region, and other relevant determinants to prevent unintended disparities and strengthen institutional accountability.

Finally, UNI should integrate digital health and AI competencies into curricula, ensuring that future healthcare professionals understand data governance, ethical AI principles, and evidence-based deployment frameworks. Embedding digital literacy within health sciences education positions the institution as both an academic and operational contributor to responsible precision care innovation.

Through this multi-dimensional strategy, UNI can transition from isolated technology adoption toward a governance-intensive, system-centered model consistent with contemporary Learning Health System standards

CONCLUSION

Between 2019 and 2026, precision care transitioned toward governance-intensive Learning Health System architectures. Sustainability depends on interoperability, lifecycle regulation, evaluation rigor, and equity safeguards (Friedman et al., 2017; European Commission, 2022).

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THE ROLE OF TELEMEDICINE AND DIGITAL MONITORING IN NURSING AND ALLIED HEALTH PROFESSIONS

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Abstract

Telemedicine and digital monitoring are becoming an increasingly central part of healthcare delivery, especially in nursing and allied health professions. This paper presents a structured literature review, built on 20 selected sources, mainly systematic reviews, meta-analyses, umbrella reviews, and scoping reviews, focusing on the period 2021-2025. The goal was to analyze the effect of telemedicine, mHealth, and remote patient monitoring access and continuity of care, chronic disease management, the professional role of nurses and allied health professionals, as well as on safety, patient experience, and cost. The thematic synthesis shows that the literature reports clear benefits in remote patient follow-up, adherence to treatment, coordinated care, and a reduction in unnecessary visits, especially in chronic care, heart failure, obesity, rehabilitation, and wound care. At the same time, sources emphasize that the effects are not uniform in every context and depend on the design of the intervention, digital competencies, technological infrastructure, data privacy, and regulatory clarity. The results of this review suggest that telemedicine does not replace face-to-face care but complements it by making it more seamless, more accessible, and better coordinated. For nursing and allied health, this means expanding the professional role towards digital education, triage, clinical monitoring, secure documentation, and interdisciplinary management.

Keywords: telemedicine, telehealth, remote patient monitoring, nursing, allied health, telerehabilitation, mHealth, patient safety

INTRODUCTION

The shift of telemedicine from a solution mainly used in specific situations to a sustainable component of healthcare systems is already evident in the literature. The latest WHO Europe guidance describes telemedicine as a tool for reducing waiting times, improving clinical follow-up, and increasing access to services, especially when services are designed with clear criteria of readiness, monitoring, and evaluation (WHO Europe, 2024). At the same time, synthetic evidence on remote patient monitoring reports potential for improvements in safety, adherence, quality of life, and some clinical outcomes, although the effect varies depending on population, technology used, and organizational context (Tan et al., 2024; Leo et al., 2022).

For nursing and allied health professions, these developments are not just about using a technological platform, but about reconfiguring the flow of care. Nurses are taking on a greater role in digital patient education, follow-up, symptom assessment, and coordinating communication between the patient and the clinical team, while allied health professionals are using telehealth for rehabilitation, monitoring functional progress, and maintaining continuity of home care (Ariyanto & Rosa, 2024; Vaismoradi et al., 2024; Barrett et al., 2024).

Academic interest in this field has increased because telemedicine promises to solve several real care problems: geographical distance, the burden on institutions, the need for more frequent contact with patients with chronic diseases, and the cost of travel or repeated visits. However, the literature does not present this approach as an automatic solution. The most frequent obstacles include poor infrastructure, lack of digital skills, legal uncertainties, data privacy, uneven funding, and uneven regulation of professional roles (Ibrahim et al., 2024; Padmavathi et al., 2023; Venkataraman et al., 2024).

In this context, a structured review of the literature is useful not only to summarize the benefits but also to understand the conditions under which telemedicine and digital monitoring yield the best results. This is especially important for nursing and allied health programs, where a balance between technological innovation, professional standards, and patient safety is required.

1. PURPOSE OF THE PAPER

The aim of this paper is to critically analyze the latest literature on telemedicine and digital monitoring in nursing and allied health, focusing on: (1) the impact on access and continuity of care; (2) effects on the management of chronic diseases and clinical outcomes; (3) the role of nurses and allied health professionals; and (4) barriers, security requirements, and organizational implications.

2. METHODOLOGY

This paper has been prepared as a structured narrative review of the literature. The final corpus included 20 sources: 19 peer-reviewed scientific publications and 1 institutional guiding source from WHO Europe. The resources were purposefully selected to cover the same topic from several perspectives: general telehealth, remote patient monitoring, mHealth, telenursing, telerehabilitation, and allied health. Priority was given to systematic reviews, meta-analyses, umbrella reviews, and scoping reviews because these offer a higher level of synthesis than individual studies alone.

The selection was guided by four criteria: the relevance of the source, direct connection with nursing or allied health, focus on the clinical use of telemedicine or digital monitoring, and the presence of findings applicable to practice. Most of the sources date from 2021 to 2025; the institutional source of WHO Europe was included for its normative and organizational value. This paper does not claim to be a systematic formal review according to PRISMA, but rather a structured and well-argued academic synthesis.

The analysis was conducted thematically. Each resource was coded according to the main topics it addressed: access and continuity of care; clinical management and health outcomes; adherence and self-management; the role of nurses; the role of allied health and tele-rehabilitation; safety, privacy, and clinical governance; as well as organizational and economic barriers. This approach enabled comparison between sources without reducing them to a simple descriptive list.

Table 1. Characteristics of the included literature

	Source	Type	The Focus	Main contribution
1	WHO Europe, 2024	Guide / Policy	Readiness of systems, assessment, capabilities, infrastructure, and monitoring of telemedicine services	Telemedicine increases access and tracking but requires assessment, standards, infrastructure, and digital skills.
2	Tan et al., 2024	Systematic review	The impact of RPM on safety, adherence, quality of life, and cost.	RPM often improves adherence, patient experience, and some clinical outcomes, but the evidence remains heterogeneous.
3	Leo et al., 2022	Systematic review & meta-analysis	Interactive RPM for the management of chronic diseases	Interactive remote monitoring devices can support better self-management and control of chronic diseases.
4	Taylor et al., 2021	Systematic review	The impact of RPM on the use of acute care	RPM can reduce unnecessary acute visits in some contexts, but the results are not uniform across all services.

	Source	Type	The Focus	Main contribution
5	De Guzman et al., 2022	Systematic review	Cost-effectiveness of RPM for chronic diseases	RPM proves especially promising for hypertension and potentially valuable for heart failure and COPD.
6	Grakalapratan & Oremus, 2022	Systematic review	Telehealth in integrated management of heart failure in the elderly	Telehealth can support integrated multimorbidity management and ongoing follow-up in patients with heart failure.
7	Ariyanto & Rosa, 2024	Systematic review & meta-analysis	The effectiveness of telenursing in heart failure	Telenursing interventions have been linked to improved quality of life and more structured follow-up of patients with heart failure.
8	Eaton et al., 2024	Systematic review	User engagement with mHealth for adherence and self-management	mHealth supports adherence and self-management, but effectiveness depends on design, feedback, and usability.
9	Colaone et al., 2025	Systematic review & meta-analysis	Nursing interventions through telemedicine for obesity and overweight	Remote nursing interventions can help monitor weight, provide counseling, and provide long-term risk management.
10	Hua et al., 2025	Systematic review & Delphi	mHealth Nurse-Led Frame for Chronic Illness	The nurse's role includes education, triage, monitoring, and coordination of digital care.
11	Vaismoradi et al., 2024	Scoping review	Patient safety and the role of specialist nurses in home care	Specialist nurses are key to safety, treatment, patient education, and risk management in home telehealth.
12	Ibrahim et al., 2024	Cross-sectional study	Nurses' perspective on safety protocols in telemedicine	Privacy, system reliability, informed consent, and technological capability emerge as central elements of security.
13	Barrett et al., 2024	Rapid umbrella review	Allied health interventions offered through telehealth	Telehealth in allied health shows clinical benefits and acceptable experience but requires an adaptation of the service model.
14	Raymond et al., 2024	Rapid systematic review of RCTs	Telehealth modalities in allied health interventions	In some allied health interventions, telehealth methods achieve results comparable to physical care.

	Source	Type	The Focus	Main contribution
15	Padmavathi et al., 2023	Systematic review	Barriers and facilitators for tele-rehabilitation	Usability, internet connectivity, motivation, and technical support directly influence the use of tele-rehabilitation.
16	Man et al., 2024	Systematic review & meta-analysis	Telephysiotherapy in elderly adults	Telephysiotherapy can improve physical and psychological outcomes in the elderly when the intervention is structured.
17	Simmich et al., 2024	Systematic review	Satisfaction, participation, and adherence in video telerehabilitation	Real-time video telerehabilitation achieves comparable satisfaction and sometimes better participation than physical physical therapy.
18	Shambushankar et al., 2025	Systematic review & meta-analysis	Cost-effectiveness of telerehabilitation	Telerehabilitation can be cost-effective in some contexts, but it does not always dominate traditional rehabilitation.
19	Venkataraman et al., 2024	Systematic review	Barriers and facilitators to the implementation of telemedicine	The main barriers are infrastructure, regulation, financing, and socio-cultural factors; Facilitators include training and organizational clarity.
20	Tanveer et al., 2025	Systematic review	RPM in wound care	RPM in wound care reports mostly favorable outcomes for follow-up, communication, and a reduction in unnecessary visits.

3. REVIEW RESULTS

Thematic analysis of 20 included sources shows that current literature supports the use of telemedicine and digital monitoring as a functional supplement to traditional care, especially when patients need frequent contact, education, symptom control, and long-term monitoring. In this corpus, 15 out of 20 sources directly addressed clinical management and health outcomes; 12 out of 20 reported impact on approach, continuity, or follow-up; 7 out of 20 specifically addressed adherence and self-management; 6 out of 20 dealt with the role of nurses; 6 out of 20 addressed allied health and telerehabilitation; 6 out of 20 organizational barriers; 5 out of 20 security and privacy; and 5 out of 20 economic implications. These frequencies do not represent effect magnitude, but rather the scope of topics within the literature reviewed.

Table 2. Thematic synthesis of results

Topic	Resources (n/20)	Summary of findings	Representative Sources
Access, continuity, and follow-up	12	Telehealth can expand access, reduce the need for travel, and support more frequent patient contact, especially in chronic care and areas with limited access.	WHO Europe, 2024; Taylor et al., 2021; Barrett et al., 2024
Clinical management and health outcomes	15	The literature reports improvements or comparable outcomes in some clinical areas, but the evidence remains heterogeneous and depends on diagnosis, intervention design, and the intensity of monitoring.	Tan et al., 2024; Kirakalaprathapan & Oremus, 2022; Man et al., 2024
Adherence and self-management	7	mHealth and RPM make daily feedback, education, and follow-up easier, helping adherence to therapy and self-management of chronic diseases.	Eaton et al., 2024; Leo et al., 2022; Ariyanto & Rosa, 2024
The role of nurses	6	Nurses appear as digital educators, triagists, clinical monitors, and care coordinators, especially in home care and chronic care.	Hua et al., 2025; Vaismoradi et al., 2024; Colaone et al., 2025
Allied health and telerehabilitation	6	Tele-rehabilitation and allied health services often yield results comparable to physical care, with satisfaction and good participation when interventions are structured.	Barrett et al., 2024; Raymond et al., 2024; Simmich et al., 2024
Implementation, barriers, and facilitators	6	The main obstacles are infrastructure, usability, financing, organizational clarity, and digital competencies. Facilitators include training, protocols, and technical support.	Padmavathi et al., 2023; Venkataraman et al., 2024; WHO Europe, 2024
Safety, privacy, and clinical governance	5	Data privacy, system reliability, documentation, and informed consent are the minimum conditions for the safe use of telehealth.	Ibrahim et al., 2024; Vaismoradi et al., 2024; WHO Europe, 2024
Cost and cost-effectiveness	5	Some interventions appear to be cost-effective, especially when expensive events or unnecessary visits are reduced, but not every digital model automatically becomes cheaper.	De Guzman et al., 2022; Shambushankar et al., 2025; Tan et al., 2024

3.1 Access and continuity of care

Among most resources that generally covered telehealth, one of the most sustainable benefits was increased access to care and the flexibility of its delivery. WHO Europe (2024) clearly establishes this dimension by linking telemedicine with better management of health conditions, shorter waiting times, and greater access for patients with geographic or functional limitations. This finding is supported by reviews reporting a reduction in unnecessary acute visits or at least the potential to shift some care from the hospital to home (Taylor et al., 2021; Tan et al., 2024).

For nurses, this means that follow-up is not limited to outpatient visits. Telenursing in patients with heart failure, for example, has been associated with more regular contact, more organized support, and

improved quality of life (Ariyanto & Rosa, 2024). In wound care, remote patient monitoring is reported as a tool that facilitates communication with the patient, tracks progress, and reduces unnecessary visits to the institution (Tanveer et al., 2025).

3.2 Management of chronic diseases and clinical outcomes

The literature suggests that the most tangible benefits of telemedicine appear in the long-term management of chronic diseases. Reviews of interactive RPM and mHealth show that continuous feedback, parameter monitoring, and structuring communication can help self-manage and control chronic conditions (Leo et al., 2022; Eaton et al., 2024). In telehealth for heart failure, especially in elderly patients with multimorbidity, the findings are promising for better continuity of care and better integration of condition management (Kirakalaprathapan & Oremus, 2022).

However, the literature does not support the idea that every digital solution automatically produces better results. The review by Tan et al. (2024) highlights significant heterogeneity in safety, adherence, quality of life, and cost, while Taylor et al. (2021) show that the reduction in acute care use is not uniform across every program. This means that effectiveness is closely linked to how the intervention is designed, the intensity of monitoring, the patient profile, and the clinical team's capacity to use the data in decision-making.

3.3 The Role of Nurses in Digital Care

One of the clearest findings of this review is the expansion of the nursing role in the digital environment. In the included sources, nurses appear not simply as platform users, but as professionals who keep the intervention functional: they educate the patient, verify the submitted data, perform triage, promote adherence, and coordinate communication with the doctor and the multidisciplinary team (Hua et al., 2025; Ariyanto & Rosa, 2024).

In home care, the role of specialist nurses is directly linked to patient safety. According to the scoping review by Vaismoradi et al. (2024), nurses are critical for risk identification, interpreting monitoring signals, educating family members, and ensuring the continuity of care. In the field of obesity and overweight, telemedicine nursing interventions have emerged as a useful tool for long-term monitoring, counseling, and patient support in behavior change (Colaone et al., 2025). This shows that telemedicine does not diminish the role of the nurse; On the contrary, it makes it more analytical, more coordinating, and more data-mediated.

3.4 Allied health and telerehabilitation

Resources addressing allied health and telerehabilitation provide a relatively positive overview. Barrett et al.'s Umbrella review (2024) and the rapid review of RCTs by Raymond et al. (2024) report that a significant

number of allied health interventions offered through telehealth provide clinical benefits and an acceptable experience for patients and clinicians. In some contexts, the results are comparable to physical care, especially when the program is structured, with clear goals and standardized protocols.

In physiotherapy, evidence is especially useful. Man et al. (2024) report physical and psychological benefits from telephysiotherapy in the elderly, while Simmich et al. (2024) show that real-time video telerehabilitation achieves comparable satisfaction and sometimes even better participation and adherence than in-person physiotherapy. On the other hand, Padmavathi et al. (2023) recall that the success of telerehabilitation depends on usability, technical support, stable connection, and user motivation. So, allied health benefits from telehealth when technology is used to support therapeutic goals rather than as a mechanical substitute for professional contact, rather than as a mechanical substitute for professional contact.

3.5 Security, Privacy, and Implementation

The adoption of telemedicine depends not only on clinical effectiveness but also on safety and implementation conditions. The study by Ibrahim et al. (2024) highlights that from nurses' perspectives, data privacy, system reliability, informed consent, and protocol clarity are key elements of patient safety. This aligns with the conclusions of WHO Europe (2024), according to which telemedicine should be evaluated not only for outcomes but also for organizational readiness, professional skills, and infrastructure.

The most frequently reported barriers in the literature are insufficient infrastructure, legal uncertainty, lack of sustainable funding, low digital skills, and uncertainty about professional roles (Venkataraman et al., 2024; Padmavathi et al., 2023). On the other hand, factors facilitating implementation include practical training, user involvement in design, clear clinical protocols, technical support, and integration of the platform with the actual clinical workflow (WHO Europe, 2024; Vaismoradi et al., 2024).

Table 3. Main barriers and recommended organizational responses

The main barrier	Practical consequences	The recommended response
Lack of infrastructure and unstable internet	Communication interruptions, reduced usability, and follow-up failure	Investment in stable platforms, suitable equipment, and backup communication channels
Limited digital skills among patients or staff.	Low adherence, incorrect use of equipment, and risk of errors	Basic and ongoing training, simple manuals, and technical support
Privacy and data security	Risk of breach of confidentiality and loss of trust	Clear protocols for consent, authentication, documentation, and authorized access

The main barrier	Practical consequences	The recommended response
Regulatory or financial uncertainty	Slow adoption and instability of the program	Institutional rules, funding models, and definition of professional roles
Design not adapted to clinical workflow	Increased staff workload and formal use without practical value	Co-design with clinicians and integration with existing care processes

4. DISCUSSION

This review shows that the latest literature is consistent enough to support a key conclusion: telemedicine and digital monitoring have real value in nursing and allied health, but their value is conditional. The benefits are more evident in situations where the patient needs continuous contact, parameter monitoring, repeated education, and coordination between professions. This is why fields such as heart failure, obesity, chronic care, home care, and rehabilitation consistently appear in the literature as fields where telehealth has practical potential (Kirakalaprathapan & Oremus, 2022; Ariyanto & Rosa, 2024; Colaone et al., 2025).

At the same time, the paper makes it clear that telehealth should not be romanticized. The evidence is not homogeneous, and not every program brings cost reduction, fewer hospitalizations, or a clear improvement in outcomes. Cost-effectiveness depends on the disease, the organization of the service, the intensity of monitoring, and whether the collected data translate into real clinical decision-making (De Guzman et al., 2022; Shambushankar et al. 2025). In practice, this means that investing in technology without parallel investment in personnel, protocols, and training often yields partial results.

A particularly important point for health disciplines is the transformation of the professional role. Nurses and allied health professionals do not lose relevance in the digital model; On the contrary, they become a key point for translating data into secure and personalized care. Patient education, interpretation of monitoring signals, documentation, case escalation, and motivational support are functions that cannot be fully automated without losing clinical quality (Hua et al., 2025; Vaismoradi et al., 2024; Barrett et al., 2024).

Therefore, telemedicine should be understood as a hybrid model. Face-to-face care remains essential for physical assessment, procedures, complex cases, and building therapeutic trust, while digital care expands this model by making it faster, more continuous, and more accessible. The most reasonable approach, according to the reviewed literature, is the integration of telehealth in service of clinical needs rather than blindly replacing traditional forms of care.

5. IMPLICATIONS FOR NURSING PRACTICE AND ALLIED HEALTH

Several direct implications for practice emerge from this review. First, telehealth programs must have clear protocols for testing, documenting, scaling, and maintaining confidentiality. Second, care

professionals should be trained not only in the technical use of the platform but also in remote clinical communication, data interpretation, and risk identification. Third, patients should receive simple practical guidance for using devices and applications, especially when it comes to the elderly or people with limited digital literacy.

For allied health, telerehabilitation should be designed with measurable objectives, a structured exercise or activity plan, and clear feedback mechanisms. For nursing, telemonitoring should be linked to concrete clinical decisions and not simply to passive data collection. In both cases, technology only has value when it improves the quality of care, not when it adds administrative burden without clear benefit to the patient.

5. 1 Limitations of the Review

This work has some limitations. First, it is a structured narrative review and not a formal systematic review with the PRISMA protocol and a full bias risk assessment for each source. Second, the literature included is heterogeneous in terms of population, technologies, and measured outcomes, so comparisons cannot be treated as a single meta-analysis. Thirdly, some of the sources consist of extensive reviews covering several clinical contexts, which makes it difficult to draw identical conclusions for every country or institution. However, this approach is sufficient for an academic synthesis at the seminar level or literature review.

CONCLUSION

Telemedicine and digital monitoring are being consolidated as a functional part of modern care in nursing and allied health. The reviewed literature shows that they can improve access, follow-up, adherence, and some clinical outcomes, especially in chronic care, telenursing, and telerehabilitation. Equally clearly, the literature emphasizes that these benefits are not achieved automatically. Success depends on the design of the intervention, the competencies of the staff, patient readiness, integration into the clinical flow, and adherence to safety standards.

In conclusion, telehealth should be seen as a complementary and hybrid model, not as an unconditional replacement for traditional care. For nursing and allied health, this field represents not only new technology but also an expansion of the professional role towards more coordinated, more monitored, and more data-driven care.

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ARTIFICIAL INTELLIGENCE AND MENTAL HEALTH: OPPORTUNITIES, CHALLENGES, AND IMPLICATIONS IN A DIGITAL SOCIETY

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Abstract

Mental health is a complex and multidisciplinary field influenced by psychological, psychiatric, and healthcare perspectives. The advancement of artificial intelligence (AI) in the 21st century has created new opportunities for enhancing mental healthcare, including early identification of mental health issues, personalized interventions, virtual therapy, telehealth, and continuous monitoring. Artificial intelligence systems can analyze large datasets, detect patterns, and support clinical decision-making, potentially improving diagnostic accuracy and treatment planning. Beyond clinical applications, artificial intelligence interacts with lifestyle and digital society, influencing daily well-being and social behavior. AI-powered digital tools can provide personalized recommendations, monitor mood and stress, and support preventive mental health strategies. However, the integration of artificial intelligence raises ethical and social concerns, including privacy, autonomy, algorithmic bias, and the risk of overreliance on technology. Therefore, a balanced, human-centered approach is essential to ensure that artificial intelligence complements rather than replaces human care. This theoretical paper aims to explore current and emerging applications, challenges, and implications of artificial intelligence in mental health, emphasizing the interplay between technology, lifestyle, and psychological well-being in a digital society.

Keywords: artificial intelligence, mental health, digital society, ethics, lifestyle, preventive care.

INTRODUCTION

Mental health is a fundamental component of individual and societal well-being and plays a crucial role in social and socio-economic development (Cresswell-Smith et al., 2022). The World Health Organization emphasizes the urgent need for prevention and early intervention in mental health care (World Health Organization, 2022). Rapid changes in lifestyle, work demands, and academic pressures have contributed to an increasing prevalence of psychological problems globally. Mental health conditions are common worldwide, and many mental disorders emerge during childhood, adolescence, or early adulthood. Evidence from epidemiological research indicates that a substantial proportion of mental disorders have their onset before the age of 25, highlighting the importance of early identification, prevention, and intervention. Mental disorders significantly impair daily functioning, social relationships, and overall quality of life.

Despite the high prevalence of mental health conditions, substantial barriers remain in detection, prevention, treatment, and monitoring, including stigma, limited access to services, and a shortage of mental health professionals. Conventional mental health interventions, although effective, are often insufficient to meet growing global demands.

In recent years, artificial intelligence (AI) has emerged as a promising approach to address these challenges in mental healthcare (Zahlan et al., 2023). AI technologies can analyze large-scale datasets, identify behavioral and psychological patterns, and support personalized, patient-centered care. AI-based tools offer innovative opportunities for early detection, tailored interventions, and virtual therapeutic platforms, potentially improving accessibility and efficiency in mental health services.

However, the integration of artificial intelligence into mental health care raises important ethical and clinical concerns, including trust, data privacy, algorithmic bias, and the risk of reduced human interaction in therapeutic processes (World Health Organization, 2021). Mental health is inherently interdisciplinary, requiring collaboration between psychologists, psychiatrists, and healthcare professionals to ensure responsible and effective artificial intelligence implementation.

Therefore, this theoretical paper aims to examine the current landscape and role of artificial intelligence in mental health care, focusing on screening, diagnosis, and treatment, and to discuss key challenges, limitations, and future prospects of AI-supported mental health interventions.

1. ARTIFICIAL INTELLIGENCE AND MENTAL HEALTH

Mental health is a complex and multidimensional domain that involves biological, psychological, and social factors. The growing prevalence of mental health disorders worldwide, combined with limited access to mental health professionals in many regions, has created a pressing need for innovative solutions. Artificial intelligence has emerged as a promising tool to support mental health care by enhancing assessment, intervention, and prevention strategies (Lee et al., 2021).

AI technologies, including machine learning, natural language processing (NLP), and computer vision, are increasingly applied in mental health research and clinical practice, transforming how psychological assessment, monitoring, and interventions are delivered. For example, machine learning algorithms can detect subtle patterns in speech, written text, and behavioral data that may indicate early signs of anxiety, depression, bipolar disorder, or post-traumatic stress disorder (PTSD). NLP techniques can analyze social media posts, journals, or patient narratives to identify sentiment, emotional tone, or cognitive distortions, offering insights into a person's mental state that might not be captured during brief clinical sessions (Cruz-Gonzalez et al., 2025). Similarly, computer vision can evaluate facial expressions, eye movements, or micro-expressions to detect emotional responses associated with stress, sadness, or social anxiety.

AI-powered chatbots and virtual therapists, such as Woebot, Wysa, and Tess, provide scalable psychoeducational support and deliver evidence-based interventions, including cognitive-behavioral therapy (CBT), dialectical behavior therapy (DBT), and mindfulness exercises (Omarov et al., 2023). These systems allow continuous interaction outside traditional therapy settings, offering real-time feedback, mood tracking, and personalized coping strategies, which can improve adherence and engagement in mental health programs. Importantly, these tools can adapt dynamically to individual user responses, tailoring interventions based on progress or changing emotional states.

Research has shown that artificial intelligence can complement traditional care by identifying trends and risk factors across large populations, supporting population-level mental health initiatives, and providing personalized insights at the individual level (Batko & Ślęzak, 2022). However, despite these benefits, integrating artificial intelligence into mental health practice requires careful attention to accuracy, interpretability, and ethical concerns, ensuring that these technologies serve as enhancing tools rather than replacements for human clinicians.

2. IMPACT OF ARTIFICIAL INTELLIGENCE ON MENTAL HEALTH OUTCOMES

Artificial intelligence is increasingly applied in mental health to analyze, predict, and support psychological and behavioral processes. AI technologies are used in behavioral analysis and prediction, emotion recognition, virtual therapeutic agents, cognitive assessment, clinical decision support, and digital mental health interventions. By processing large-scale behavioral and clinical data, artificial intelligence systems enable early detection of mental health risks, personalized interventions, and improved treatment planning.

Digital phenotyping approaches can complement traditional mental health assessment by using data collected from smartphones, wearable devices, and other digital technologies to identify behavioral and physiological patterns associated with mental health conditions. Multimodal sensing may incorporate indicators such as sleep, physical activity, mobility, heart rate, facial and vocal characteristics, and social behavior, providing continuous information that can support the assessment and monitoring of psychological states (Moura et al., 2023).

Systematic evidence also indicates that digital phenotyping may support remote monitoring and the prediction of symptom exacerbation or relapse across several mental disorders, including mood, anxiety, and psychotic disorders (Bufano et al., 2023).

Wearable and video-based technologies have additionally been investigated for continuous multimodal monitoring and relapse prevention, illustrating how AI-supported systems may contribute to preventive mental healthcare (Zlatintsi et al., 2022). Overall, artificial intelligence has the potential to enhance mental health outcomes by improving early detection, personalization of care, and continuity of mental health support.

3. POSITIVE AND NEGATIVE IMPACTS OF ARTIFICIAL INTELLIGENCE ON MENTAL HEALTH

Artificial intelligence has both beneficial and potentially adverse effects on mental health, depending on how it is designed, implemented, and regulated. Ethical concerns surrounding AI include bias and fairness, privacy, transparency, the possibility of inaccurate or harmful information, and the need for appropriate human oversight. It has both positive and negative impacts on mental health.

3.1 Positive Effects of Artificial Intelligence on Mental Health

- **Accessibility and Affordability:** AI-based mental health tools, including chatbots and digital platforms, provide continuous access to mental health support, particularly in remote or underserved areas. These technologies can reduce geographical, linguistic, and financial barriers, thereby improving access to mental healthcare service.
- **Improving Diagnosis and Mental Health Support:** Artificial intelligence algorithms have significant potential for early detection and diagnosis of mental disorders. By analyzing large-scale clinical and behavioral datasets, artificial intelligence systems can identify risk patterns and predictors, enabling timely interventions and personalized treatment approaches. AI-powered applications and chatbots can also provide psychoeducation, counseling support, and mental health resources to individuals who might otherwise avoid seeking help. Evidence from a systematic review and meta-analysis suggests that AI-based conversational agents can significantly reduce symptoms of depression and psychological distress, although evidence for broader improvements in psychological well-being remains less conclusive (Li et al., 2023).
- **Personalization and Assistance:** Artificial intelligence technologies can deliver personalized recommendations and interventions tailored to individual psychological profiles, enhancing users' sense of autonomy and control, which may positively influence psychological well-being.
- **Monitoring and Insights:** Wearable devices and mood-tracking applications supported by artificial intelligence can monitor behavioral and physiological indicators, facilitating early identification of mental health crises and promoting preventive care strategies.

- **Reducing Stigma:** AI-based platforms may reduce stigma by providing anonymous and non-judgmental access to mental health support. Virtual agents can encourage emotional expression and social interaction, potentially reducing loneliness and social isolation, particularly among individuals who struggle with face-to-face communication.

3.2 Negative Effects of Artificial Intelligence on Mental Health

- **Algorithmic Bias and Fairness:** Artificial intelligence models trained on biased or unrepresentative datasets may reinforce existing disparities in mental health diagnosis and treatment, potentially disadvantaging vulnerable populations (Haltaufderheide & Ranisch, 2024).
- **Privacy and Data Security Concerns:** Artificial intelligence systems often rely on large volumes of sensitive personal and behavioral data, raising concerns about privacy breaches, surveillance, and misuse of mental health information. The collection of digital phenotyping data poses significant ethical and psychological risks and requires robust governance frameworks.
- **Lack of Human Empathy:** Although artificial intelligence can support mental healthcare, it cannot replicate human empathy, clinical judgment, and the therapeutic relationship, which are central to effective psychological interventions. Overuse of AI-based tools may lead to dissatisfaction or increased anxiety among some users.
- **Over-Reliance and Technology:** Excessive dependence on artificial intelligence tools may undermine therapeutic goals aimed at fostering autonomy and self-efficacy in clients. Over-reliance on digital interventions may hinder deeper therapeutic engagement and long-term psychological growth.

4. CHALLENGES AND ETHICAL CONSIDERATIONS

Despite its potential, AI integration raises important concerns. Data privacy and security are critical due to the sensitive nature of mental health information. Accuracy and bias must be carefully monitored, as artificial intelligence systems trained on limited or skewed data may produce misleading results. Research on machine-learning approaches in healthcare emphasizes the importance of careful evaluation and risk-conscious implementation before such systems are incorporated into high-stakes clinical decision-making (Gottesman et al., 2019).

Importantly, artificial intelligence should complement, rather than replace, human clinicians, as empathy, professional judgment, and therapeutic relationships remain essential for effective mental healthcare.

The responsible implementation of AI therefore requires attention to informed consent, accountability, transparency, privacy, and human oversight. The governance of newer generative AI systems, including large multimodal models, presents additional challenges because these systems can process different forms of information and generate diverse outputs. The World Health Organization emphasizes the need for appropriate governance, ethical safeguards, regulation, and protection of human rights when such technologies are used in healthcare (World Health Organization, 2024).

Given these ethical considerations, governments, industry experts, healthcare professionals, and patient advocacy groups have an important role in developing appropriate legal and regulatory frameworks. Such frameworks should ensure that AI technologies are evaluated for safety and effectiveness, that sensitive health information is adequately protected, and that responsibility for clinical decisions remains clearly defined. A human-centered approach is therefore essential to ensure that technological innovation contributes to, rather than undermines, the quality and safety of mental healthcare.

5. CONCLUSIONS AND FUTURE DIRECTIONS

“How could artificial intelligence help everyone have better mental health around the world? This is one of the main questions in the essence of the development of this article, whose purpose has been to investigate the role of artificial intelligence in screening, diagnosing, and treatment of mental health disorders. The issue of mental health is a significant subject that has a profound impact on a vast number of individuals globally. The increasing incidence of mental health illnesses affects the development of novel approaches to deliver efficient and readily available treatment to individuals requiring assistance. An auspicious option that exhibits potential is the incorporation of artificial intelligence into mental health care. Artificial intelligence has the potential to significantly transform the management and delivery of mental health care. According to Minerva and Giubilini (2023), artificial intelligence applications such as more accurate diagnostic, personalized treatment plans, and expanded access for the therapy can address many of the shortcomings in mental health service provision. Artificial intelligence algorithms possess the capability to provide personalized recommendations and interventions to effectively manage mental health disorders.

Recent international discussions emphasize that responsible AI for mental health requires collaboration among mental health professionals, researchers, policymakers, technology developers, and people with lived experience. AI systems intended to support mental health should be grounded in evidence, appropriately evaluated, culturally and linguistically adapted, and subject to appropriate human oversight and accountability mechanisms (World Health Organization, 2026).

Future research should therefore focus not only on improving the technical performance of AI systems but also on evaluating their real-world psychological, clinical, and social consequences. Longitudinal studies, transparent evaluation frameworks, and interdisciplinary collaboration will be essential for determining when, how, and for whom AI-supported mental health interventions are beneficial.

Ultimately, artificial intelligence should be viewed as a complementary tool within a broader human-centered mental healthcare system. When developed and implemented responsibly, AI may contribute to earlier identification of mental health needs, more personalized interventions, improved continuity of care, and broader access to psychological support while preserving the central role of human expertise, empathy, and therapeutic relationships.

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PARENTS' PERCEPTIONS OF THE ROLE OF VITAMINS IN CHILDREN WITH AUTISM SPECTRUM DISORDER (ASD)

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Abstract

The global increase in Autism Spectrum Disorder (ASD) cases has led to growing interest in alternative interventions, including the use of vitamins and dietary supplements. Parents often seek natural approaches to improve their children's daily functioning and overall development. This study aims to explore parents' perceptions regarding the role of vitamins in children with ASD in the city of Shkoder, Albania. A quantitative research design was employed using a non-probabilistic convenience sample of 70 parents. Data were collected through an adapted, non-standardized questionnaire (Cronbach's Alpha $\alpha = 0.78$). The findings indicate that while a portion of parents report positive experiences with vitamin use, a large number remain uncertain about their effectiveness. Additionally, limited communication with healthcare professionals and insufficient access to reliable information were identified as key concerns. The study highlights the need for increased parental education and further research using more rigorous methodologies.

Keywords: Autism Spectrum Disorder, vitamins, dietary supplements, parental perceptions, child development

INTRODUCTION

The prevalence of Autism Spectrum Disorder (ASD) has increased significantly worldwide over recent decades (Onaolapo & Onaolapo, 2017). This rise has encouraged the exploration of alternative and complementary interventions aimed at managing ASD symptoms. Among these, vitamins and dietary supplements have gained attention due to their potential role in supporting neurological and behavioral development.

Parents of children with ASD often experience higher levels of stress compared to parents of typically developing children or those with other developmental disorders (Dabrowska & Pisula, 2010; Hayes & Watson, 2013). As a result, they frequently seek additional interventions to improve their children's well-being.

Despite growing global research, there is a lack of local studies in Albania examining parents' perceptions regarding the use of vitamins in children with ASD. This study aims to address this gap.

1. THEORETICAL BACKGROUND

Several theories and studies support the investigation of vitamin use in ASD:

- **Biomedical Theory of Autism:** Suggests that dietary interventions and supplements may contribute to symptom improvement.
- **Parent-Centered Care Model:** Emphasizes the active role of parents in selecting treatments and interventions.
- Adams et al. (2011) found that vitamin and mineral supplementation may improve certain ASD symptoms, such as concentration and sleep.
- However, scientific evidence remains mixed, despite parents often reporting subjective improvements.

2. METHODOLOGY

2.1 Research Design

This study employed a quantitative research design.

2.2 Participants

The sample consisted of 70 parents of children with ASD in Shkoder, Albania. A non-probabilistic convenience sampling method was used.

2.3 Instrument

Data were collected an adapted, non-standardized questionnaire with acceptable reliability (Cronbach's Alpha $\alpha = 0.78$).

2.4 Procedure

Participants completed the questionnaire voluntarily. The study focused particularly on responses from parents who reported using vitamins for their children.

3. RESULTS

3.1 Demographic Data

Out of 70 respondents, 90% were female ($n = 63$) and 10% were male ($n = 7$). Most children were aged 3–5 years (57.1%), followed by 6–9 years (40%), and 10–12 years (2.9%). Regarding residence, 48.6% lived in Shkoder city and 51.4% in surrounding areas.

3.2 Use of Vitamins and Supplements

Approximately 42.9% of children had used vitamins or dietary supplements. Among them, 17.1% used them daily, while others reported occasional or rare use.

Omega-3 (45.7%) and Vitamin D (24.3%) were perceived as the most important supplements.

3.3 Parental Attitudes Toward Vitamin Use

A majority of parents were uncertain about the effectiveness of vitamins (62.9%), while smaller percentages reported positive effects.

Despite this uncertainty, overall perceptions were generally positive, with 40% reporting very positive views and 12.9% somewhat positive.

3.4 Professional Support

Only 24.3% of parents had received recommendations from healthcare professionals, and 64.3% reported never discussing supplement use with professionals.

3.5 Safety and Concerns

Most parents (74.3%) reported no negative effects, and 77.1% expressed no major concerns. However, some mentioned lack of scientific evidence and potential side effects as concerns.

Table 1

Gender of Respondents

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	7	10.0	10.0	10.0
Female	63	90.0	90.0	100.0
Total	70	100.0	100.0	

Table 2

Age of the Child

Age Group	Frequency	Percent	Valid Percent	Cumulative Percent
3–5	40	57.1	57.1	57.1
6–9	28	40.0	40.0	97.1
10–12	2	2.9	2.9	100.0
Total	70	100.0	100.0	

Table 3

Place of Residence

Residence	Frequency	Percent	Valid Percent	Cumulative Percent
Shkoder	34	48.6	48.6	48.6
Surrounding areas	36	51.4	51.4	100.0
Total	70	100.0	100.0	

Table 4

Birth Order of the Child

Birth Order	Frequency	Percent	Valid Percent	Cumulative Percent
First child	27	38.6	38.6	38.6
Middle child	20	28.6	28.6	67.1
Youngest	11	15.7	15.7	82.9
Only child	12	17.1	17.1	100.0
Total	70	100.0	100.0	

Table 5

Level of Information About Vitamins

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	13	18.6	18.6	18.6
No	29	41.4	41.4	60.0
A little	28	40.0	40.0	100.0
Total	70	100.0	100.0	

Table 6

Perceived Important Vitamins

Vitamin	Frequency	Percent	Valid Percent	Cumulative Percent
Vitamin D	17	24.3	24.3	24.3
Vitamin B	1	1.4	1.4	25.7
Omega-3	32	45.7	45.7	71.4
Other	20	28.6	28.6	100.0
Total	70	100.0	100.0	

Table 7

Perceived Impact of Vitamins

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Very positive	9	12.9	12.9	12.9
Somewhat positive	17	24.3	24.3	37.1
Not sure	44	62.9	62.9	100.0
Total	70	100.0	100.0	

Table 8

Use of Vitamins

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	30	42.9	42.9	42.9
No	40	57.1	57.1	100.0
Total	70	100.0	100.0	

Table 9

Frequency of Vitamin Use

Frequency of Use	Frequency	Percent	Valid Percent	Cumulative Percent
Every day	12	17.1	17.1	17.1
Occasionally	8	11.4	11.4	28.6
Rarely	10	14.3	14.3	42.9
Does not use	40	57.1	57.1	100.0
Total	70	100.0	100.0	

Table 10

Main Reasons for Giving Vitamins

Reason	Frequency	Percent	Valid Percent	Cumulative Percent
Improve mental development	9	12.9	12.9	12.9
Improve immune system	21	30.0	30.0	42.9
Recommended by doctor	11	15.7	15.7	58.6
Maintain balanced levels	20	28.6	28.6	87.1
Other	9	12.9	12.9	100.0
Total	70	100.0	100.0	

4. DISCUSSION

The findings suggest that while parents tend to hold positive attitudes toward vitamin use, there is considerable uncertainty regarding their actual effectiveness. This may be due to limited access to reliable information and insufficient communication with healthcare professionals.

The high percentage of parents who do not consult professionals highlights a gap in healthcare guidance. This aligns with previous research indicating that parents often rely on informal sources when making decisions about alternative treatments.

5. LIMITATIONS

- The use of a convenience sample limits generalizability
- The questionnaire was not fully standardized
- Data were based on self-reports, which may introduce bias
- No clinical comparisons were made between users and non-users of vitamins

6. CONCLUSIONS AND RECOMMENDATIONS

The study concludes that parents generally perceive vitamins positively, although uncertainty remains regarding their effectiveness.

- Increase parental education on safe supplement use
- Encourage stronger communication between parents and healthcare professionals
- Conduct further research using more rigorous and standardized methodologies

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THE FUTURE OF MENTAL HEALTH: INTEGRATING TECHNOLOGY, BIOLOGY AND PSYCHOLOGY

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Abstract

Mental health has definitely evolved from the psyche or spiritual and metaphysical interpretations to scientific and clinical frameworks becoming one of the most pressing global public health concerns of the 21st century. Nearly one billion people worldwide live with a mental disorder, with anxiety and depression contributing significantly to disability and economic burden. Directing these challenges requires more than isolated disciplinary approaches. This study argues that the future of mental health care lies in integrating biological theory, psychological theory and as well as technological innovation. Advances in neuroscience, psychopharmacology, digital therapeutics and artificial intelligence offer new opportunities for early detection, personalized intervention and enlarged access to care. However, an overly reductionist or technology driven model holds danger for neglecting the complexity of the human psyche and the relational dimensions of well-being. By exploring both the promise and the ethical risks of emerging technologies this paper proposes a balanced, person-centered paradigm that harmonizes biology, psychology and technology. The future of mental health depends not on replacing the human element but on strengthening it through thoughtful integration of scientific and digital development.

Keywords: Mental Health Innovation; Holistic Approach; Neuropsychology; Psychotherapy

INTRODUCTION

Mental health is as old a concern as humanity itself. Across history, people have grappled with inner struggles and emotional well-being essentially an inner voice that guides our thoughts and feelings. The healthier this inner voice the healthier our mental state tends to be. Yet the understanding and treatment of mental health have evolved dramatically over time. Early approaches often interpreted mental distress through spiritual or metaphysical lenses, but the advent of modern science brought new perspectives. By the early 20th century, scientists and physicians began framing mental health in clinical terms, giving rise to fields like psychiatry and psychology. In 1908, for example, the mental hygiene movement emerged to prevent mental illness and preserve good mental health through community education and early intervention (Mandell, 1995). This marked a shift toward viewing mental well-being as something that could be cultivated and protected, not merely the absence of insanity or disorder. Today, mental health is recognized as a global public health priority. Nearly one billion people worldwide are living with a mental disorder (Kleinau, 2022). Common conditions such as anxiety and depression affect roughly 29% of the global population over their lifetime. These issues carry immense personal and societal costs, mental disorders are now the leading cause of years lived with disability worldwide and rank second among all health conditions in overall disability burden (Kleinau, 2022). The economic impact is staggering, with global productivity losses due to mental health conditions estimated around \$1 trillion annually (Sun, Lu, Shao, et al., 2025). Clearly, improving mental health outcomes is critical for individuals, communities and economies alike. But how should we approach this challenge? Increasingly, experts argue that the future of mental health care lies in an integrated approach, one that combines the strengths of biology, psychology, and technology. This paper explores the historical evolution of mental health science, examines how biological and psychological perspectives contribute to understanding mental well-being, and discusses the rise of technology-based interventions. It also critically considers the risks of a narrow, reductionist view that erases the human psyche, and the potential harms of over relying on artificial intelligence or other technologies without proper guidance. Ultimately, the goal is to envision a future mental health paradigm that harnesses modern innovations while maintaining a humane, holistic focus on the person.

1. HISTORICAL PERSPECTIVE

The concept of mental health has deep historical roots. Ancient civilizations attributed mental illness to various causes from imbalances of bodily humors in Hippocratic medicine to spiritual or demonic influences in medieval times. For millennia, treatments were often primitive or cruel reflecting misunderstanding and stigma. A turning point came with the Enlightenment and the rise of science, which planted the seeds for psychiatry and psychology. By the 19th century, thinkers like Philippe Pinel in France advocated for humane treatment of the mentally ill and asylums began to be reformed. Still, early scientific approaches were split. On one hand, biologically oriented physicians sought physical causes

(brain pathology, genetics for mental disorders on the other psychologically oriented thinkers like Sigmund Freud probed the inner workings of the mind and unconscious. The early 20th century saw these streams converge in the mental hygiene movement and the nascent field of clinical psychology. Pioneers such as Adolph Meyer and Clifford Beers in the 1900s argued that mental illness lay on a continuum with mental health and that society should proactively promote mental hygiene (mental wellness) through public health initiatives (Mandell, 1995). This era introduced the idea that mental health could be prevented and preserved by improving social conditions and education, not just treated after a breakdown. As the 20th century progressed, the biological and psychological perspectives on mental health took turns in dominance. The mid-1900s brought a revolution in biological psychiatry with the discovery of psychiatric medications. Antipsychotic drugs, antidepressants, and mood stabilizers dramatically improved the prognosis for conditions like schizophrenia and depression. The prevailing view became that mental disorders have a biological basis in brain chemistry and physiology, the so called chemical imbalance hypothesis of depression being one well-known example. However, recent research has complicated this picture: a comprehensive 2022 umbrella review found no consistent evidence that depression is caused by low serotonin levels or other simple neurotransmitter deficiencies (Moncrieff, Cooper, Stockmann, et al., 2023). This finding challenges the reductionist notion that mental illness can be fully explained by a few hormone movements in the brain. Biology is clearly important, but it is only one piece of a much larger puzzle. Meanwhile, psychology as a discipline developed its own models of mental health. Twentieth-century psychology gave rise to behaviorism (focusing on learned behaviors), cognitive theory, humanistic and existential psychology and other schools. Clinical psychologists began quantifying mental health through diagnostic criteria and psychometric tests, but also retained focus on subjective experience: a person's emotions, beliefs, relationships, and sense of self. The World Health Organization defined mental health in 1948 not merely as the absence of illness but as a state of well-being in which an individual realizes their abilities, copes with normal stresses, works productively, and contributes to society. This broad definition highlights that mental health encompasses social and emotional wellness, not just the lack of symptoms. In line with this, modern psychology evaluates mental health on multiple levels from internal cognitive processes to family dynamics and cultural influences. For example, resilience (the capacity to cope with adversity) and a sense of belonging are now recognized as key components of mental well-being (Kleinau, 2022). The WHO's 2022 report emphasizes that vulnerability to mental health problems is determined by a complex interplay of individual, family, community, and structural factors and this holistic understanding laid the groundwork for the widely endorsed biopsychosocial model of mental health, which posits that biological, psychological, and social factors are all essential pieces of every mental health condition. However, as psychology aligned itself with scientific empiricism, some critics argue it paid a price: the loss of the psyche or soul that originally defined it. The term psychology comes from psyche which means spirit and logos which means study yet modern psychology often downplays or excludes the spiritual or metaphysical dimensions of human

existence. By striving to be a rigorous science, psychology sometimes treats the mind as if it were only a combination of some hormones in the brain, reducing experiences like love, purpose or consciousness to neurons and neurotransmitters. This trend has alarmed some scholars. They contend that “modern psychology bargained away its soul, in exchange for scientific status and in doing so has rendered null and void any fuller understanding of what is still understood by many as the soul (Sotillos, 2021). In other words, a purely materialist approach may fail to account for the deeply subjective, spiritual or existential aspects of mental health. These critics call for re integrating wisdom from philosophy and spiritual traditions into mental health care much as modern philosophy once distanced itself from metaphysics, only to face questions science alone couldn’t answer. While not everyone would go as far as labeling psychology dehumanizing there is growing recognition that mental health care must address the whole person including their values, beliefs, meaning and sense of belonging. Ignoring these in favor of only hormones and brain circuits can leave critical gaps in treatment. Holistic approach is always the most important thing to take in regard while having to do with the science of researching the behaviour of the human being.

2. BIOLOGICAL PERSPECTIVE ON MENTAL HEALTH

Modern biology has vastly improved our understanding of mental health and illness. Neuroscience and genetics in particular have illuminated many biological underpinnings of mental states. We now know that severe mental disorders like schizophrenia or bipolar disorder are highly heritable and associated with complex genetic risk factors. Neuroimaging studies show measurable differences in brain structure and function in conditions such as depression, PTSD, or ADHD. For instance, chronic depression has been linked to reduced volume in the hippocampus while anxiety disorders are associated with hyperactivity in fear-processing circuits of the amygdala. Hormonal imbalances and neurochemical dysregulation also play roles in mood and behavior. From a biological perspective, mental health can be seen as a state of neurochemical and neurophysiological equilibrium and mental illnesses as disruptions of that equilibrium whether due to genetics, injury, infection, developmental anomalies or other insults to brain and body. The biological lens has led to effective somatic treatments. According to a lot of authors exploring psychopharmacology, especially Hillhouse and Porter (2015) explain that beginning in the 1950s, scientists introduced medications that alter brain chemistry to relieve psychiatric symptoms. Antidepressants (e.g. SSRIs), anti-anxiety drugs, mood stabilizers and antipsychotics have become mainstays of treatment and have undoubtedly saved or improved millions of lives. Newer biological treatments continue to emerge. In the past few years, rapid-acting antidepressants like ketamine and esketamine have shown promise for treatment-resistant depression by targeting glutamate pathways rather than the traditional serotonin route. Likewise, neuromodulation techniques such as transcranial magnetic stimulation (TMS) and deep brain stimulation offer non-pharmaceutical ways to alter brain activity and treat conditions like depression or OCD. The frontier of biological psychiatry now includes exploring the gut-brain axis or how

microbiome and inflammation affect mood, immunopsychiatry or roles of the immune system in disorders and even the therapeutic potential of psychedelics under controlled conditions for conditions like PTSD or end-of-life anxiety. Yet for all these advances, the biological perspective has limitations if taken in isolation. Reductionism or the idea that we can reduce mental health entirely to molecular and neural mechanisms has increasingly been questioned. Human brains and minds are enormously complex, and simple biological models have often failed to capture that complexity. A salient example is the serotonin hypothesis of depression. For decades, the prevailing wisdom was that depression is caused by a deficit of serotonin in the brain which SSRIs correct. But comprehensive analyses now conclude that there is no clear evidence supporting low serotonin as the direct cause of depression (Moncrieff et al., 2023).

Depression likely involves a constellation of factors (brain circuits, stress hormones, psychosocial stressors, etc.), and serotonin is just one part of it. Biological research itself is moving toward more integrative frameworks, such as precision psychiatry or the Research Domain Criteria approach which seek to combine genetics, neural imaging, and behavioral data to better characterize mental disorders beyond simplistic chemical models. This reinforces that while biology provides critical insights and will undoubtedly be central in the future of mental health via things like biomarkers and personalized medicine, it must work in tandem with psychological and social understanding. A purely biomedical model, in the absence of empathy and context, risks treating patients as broken machines rather than whole persons. As we integrate biology, we must remember that brains exist within people, and people exist within social networks.

3. PSYCHOLOGICAL PERSPECTIVE ON MENTAL HEALTH

In parallel to biological advances, psychology and psychotherapy have visibly enriched the approach to mental health. Psychology views mental health in terms of thoughts, emotions, behaviors and relationships the lived experience of the mind. From a psychological perspective, a mentally healthy person is one who can effectively regulate their emotions, hold realistic and positive beliefs about themselves and others, cope with stress, form healthy relationships, and find meaning or purpose in life. Psychological theories have given us conceptual tools to assess and improve these facets of mental well-being. A lot of books and papers are written in this area but Corey (2016) summarizes all the approaches in a wonderful way only in one textbook. Cognitive-behavioral models, for example, show how distorted thinking patterns (like all-or-nothing thinking or catastrophizing) can fuel anxiety and depression, and how reframing those thoughts can alleviate distress. Psychodynamic models remind us that early life experiences and unconscious processes can shape our mental health in subtle but powerful ways. Humanistic psychology emphasizes personal growth, free will, and the human search for meaning, elements that are crucial for well-being but impossible to measure in a blood test or brain scan. Treatments such as Cognitive Behavioral Therapy (CBT), interpersonal therapy, family therapy, eclectic therapy and others have proven effective for a range of mental health conditions. For instance, CBT which

helps individuals identify and change negative thought patterns and behaviors has strong evidence for treating depression and anxiety, on par with medication in many cases. Unlike medication, therapy equips people with lifelong skills and often addresses root causes rather than just symptoms.

Modern psychology doesn't only treat disorders; it also promotes positive mental health through techniques like mindfulness training, stress management and resilience. Concepts like emotional intelligence, self-compassion and secure attachment have entered the lexicon as keys to fostering mental wellness. Importantly, psychological approaches place the individual's subjective experience at the center. In therapy, a counselee's personal narrative, values and goals are the guide of the process. This person-centered focus is a valuable counterweight to the one size fits all tendency that can come with biological psychiatry. It is here that the "psyche" in the sense of inner life or even spirit continues to be honored. Many therapists integrate counselees' belief systems and if applicable, spiritual practices into care, recognizing these as sources of strength and meaning. In recent years, there's been a push for a more holistic or even "biopsychosocial-spiritual" model, acknowledging that spirituality or existential well-being is a component of mental health for many people (López-Tarrida, Suárez-Reina, & de Diego-Cordero, 2024). Empirical research supports this: individuals who find a sense of purpose or who engage in fulfilling spiritual practices often report better mental health outcomes such as lower suicide risk and greater resilience even when facing illness or trauma. Mainstream psychology as an academic and clinical field tends to operate within a secular, evidence-focused framework. Some critics from cross-cultural or spiritual backgrounds argue that Western psychology can be "culture-bound" and may inadvertently pathologize experiences (like spiritual visions or communal ways of coping) that don't fit its norms (Sotillos, 2021). These voices urge more openness to diverse conceptions of mental health. Samuel Bendeck Sotillos (2021) and others have described a "crisis" in modern psychology stemming from its exclusion of metaphysical perspectives a sort of self-imposed blindness to anything that cannot be measured in a laboratory. While this view is debated, it highlights an important point for the future: psychological science should continue to expand its lens, integrating insights from humanities, philosophy, and non-Western traditions to enrich our understanding of the mind. For example, the rise of mindfulness-based therapies in the West is a case of integrating ancient contemplative practices (Buddhist meditation) with modern psychology and it has been hugely beneficial in treating stress and preventing relapse in depression. Going forward, a truly integrative mental health approach would value both the empiricism of psychology and the wisdom of humanistic and cultural perspectives.

4. THE RISE OF TECHNOLOGY IN MENTAL HEALTH

Perhaps the most striking development in recent years is the rapid integration of technology into mental health care. Digital innovation is transforming how mental health professionals diagnose, monitor and treat mental conditions. The COVID-19 pandemic accelerated some of these changes, normalizing online therapy and remote support. But even beyond telehealth video sessions, an entire ecosystem of digital

mental health tools has emerged: smartphone apps, wearable sensors, virtual reality, social media-based interventions and lastly artificial intelligence-driven platforms. This digital revolution holds great promise if implemented thoughtfully for expanding access to care and personalizing interventions. At the same time, it brings new challenges regarding efficacy, ethics, and the human touch in therapy. Thousands digital therapy apps and platforms of mental health apps are available today, offering everything from guided meditation and mood tracking to full cognitive-behavioral therapy programs. These apps put coping tools in the palm of one's hand 24/7 potentially reaching people who might never see a therapist. Research is catching up with this proliferation. A recent meta-analysis spanning 176 randomized controlled trials of mental health apps for depression or anxiety found that, overall, these apps do have a significant but small benefit in reducing symptoms compared to control conditions (Torous et al., 2025). In practical terms, self-guided apps can modestly improve mood and anxiety a hopeful sign that they can be a useful support. Apps have also shown preliminary benefits for issues like insomnia, PTSD and even serious conditions like schizophrenia (for example, helping patients remember to take medication or practice social skills). However, the effect sizes tend to be small and many apps on the market are not evidence based. An ongoing concern is that app engagement drops off: users often download an app during a crisis or spike of motivation but stop using it after a few weeks. Studies confirm that engagement challenges hamper all digital mental health tools, with high attrition rates being common (Torous et al., 2025). To address this, researchers are exploring solutions like human support and digital navigators integrating a human coach or therapist who checks in with the user and just in time interventions that intelligently deliver support when a person needs it (e.g. detecting via smartphone sensors that someone hasn't left the house in days and nudging them to take a walk (Torous et al., 2025). Interestingly, trials show that when a mental health app is combined with even minimal human guidance such as weekly brief calls or messages from a coach outcomes improve significantly (Torous et al., 2025). This underscores a crucial theme: technology works best not as a standalone replacement, but as an augmentation to human care. Connecting with a human therapist via videoconference or text is now commonplace. During the pandemic, psychiatry and therapy visits rapidly moved online, with studies showing comparable outcomes to in-person sessions for many conditions. Online therapy greatly increases accessibility, especially for individuals in remote or underserved areas who can now access specialists without travel. It also enables continuity of care when life circumstances might otherwise interrupt therapy. Moving forward, a hybrid model is emerging many clinics now offer a blend of in-person and virtual sessions, based on client needs and logistical considerations (Torous et al., 2025). Virtual Reality is proving to be a powerful tool for certain psychological interventions. In VR therapy, patients use a headset to enter computer-generated environments that can simulate real-life scenarios. This is especially useful for exposure therapy a technique where gradual exposure to a feared situation helps reduce fear over time. Therapists have used VR to treat phobias (like fear of heights, flying etc) by exposing patients to virtual versions of those heights or spiders in a controlled, safe manner. It has also been used for social anxiety (practicing social

interactions or public speaking in VR), PTSD and even for pain management and relaxation training. Studies have shown that VR-based cognitive-behavioral therapy can be effective for anxiety disorders, often comparable to real-life exposure (Torous et al., 2025). One advantage is control and customization therapists can adjust the intensity of scenarios and repeat them as needed. VR can also engage patients in ways traditional imaginal exposure cannot, making therapy more immersive. As VR technology becomes more affordable and portable (with standalone headsets), we may see it adopted more widely in clinics. However, it requires technical know-how and can cause motion sickness in some users, so it's not a panacea. Still, VR represents a fascinating convergence of technology and psychology to directly treat the mind through perceptual experience. Modern smartphones and other devices come equipped with sensors that can track activity, sleep, heart rate, and even subtle indicators like voice tone or keyboard typing speed. These devices enable digital phenotyping the moment-by-moment quantification of human behavior and physiology in real life. In mental health, digital phenotyping is being explored as a way to detect early signs of trouble. For example, changes in speech patterns or social media usage might signal an impending depressive episode, reduced step count and disrupted circadian rhythms might indicate worsening mood or psychosis relapse. By continuously monitoring these data algorithms can potentially flag individuals at risk and alert providers or carers before a crisis hits (Torous et al., 2025). AI is influencing mental health in multiple ways. Machine learning algorithms can sift through vast datasets from genetics to brain scans to electronic health records to find patterns associated with mental health conditions. For example, AI models have been trained on neuroimaging data to distinguish patients with schizophrenia from healthy controls or to predict which adolescents might develop psychosis in the future (Sun, J., Lu, T., Shao, X. et al., 2025). Early results are promising but variable: one study found that combining brain scans and genetic profiles, machine learning achieved about 48 - 62% diagnostic accuracy for psychiatric disorders better than chance but not yet clinically-ready. Some research with large language models (LLMs) like GPT-4 reported these AI systems can, in controlled tests, achieve nearly double the diagnostic accuracy of junior doctors on certain case vignettes. This suggests AI might assist in diagnostic decision-making by catching patterns a human could miss, or by integrating data from multiple sources (symptoms, family history, biomarkers) into a more objective assessment. Beyond diagnosis, AI is being used to develop personalized treatment recommendations (matching patients to the therapy or medication they're most likely to respond to, based on predictive analytics) and to power therapeutic chatbots. One rapidly growing application is AI-driven chatbots for mental health support. These are conversational agents that engage users in therapeutic dialogues often based on CBT techniques. The appeal is obvious: chatbots can be available at any time, provide a non-judgmental ear, and potentially help those who are hesitant to speak to humans. Some early studies have shown modest benefits for example, users of a CBT chatbot reported reduced depression and anxiety after a few weeks of use, compared to waitlist controls. However, the pitfalls have become equally apparent. Without strict oversight, AI chatbots may go off-script in dangerous ways. Recent research from 2025 found that generative AI chatbots, even when

instructed to act as “therapist,” systematically violate core ethical standards of real therapy (Brown University, 2025). In analyses of AI conversations, researchers observed the bots doing things no trained clinician should: inappropriately handling crises providing misleading or harmful advice (sometimes even reinforcing a user’s negative or delusional beliefs), and creating a false sense of empathy (using stock phrases like I understand how you feel without true comprehension (Brown University, 2025). The study identified at least 15 distinct ethical risks falling into categories such as lack of contextual understanding, poor therapeutic alliance, deceptive empathy, bias or discrimination, and inadequate crisis management. Unlike a human therapist, who is accountable to licensing boards and ethical codes, an AI has no accountability if it dispenses dangerous counsel, there’s no clear recourse for malpractice. This is a sobering reminder that current AI lacks true understanding and cannot replace human clinicians in providing safe care. Integrating technology into mental health raises several ethical and practical challenges that must be addressed to ensure patient safety and equitable care. Some of the major concerns include crisis management and safety that ensures that digital tools can appropriately handle users in acute crisis. For example, AI chatbots have been known to fail at recognizing or responding to suicidal ideation, sometimes giving generic or unhelpful responses (Brown University, 2025). Unlike human counselors who are trained in crisis intervention, most apps and bots are not yet equipped to deal with emergencies or they may abruptly display emergency numbers without empathy. This poses serious risks if users rely on them during life-threatening moments. Also, misinformation and advice quality for preventing the spread of incorrect or harmful advice by unvetted digital platforms. An AI system may provide misleading information or reinforce negative beliefs due to biases in its training data. Likewise, many mental health apps on app stores lack scientific validation. Taking wrong advice from such sources can lead to worsened conditions for instance, forums or apps that encourage dangerous “coping” behaviors. Users must be warned not to trust any single source blindly and to verify information with professionals (Mansuri, 2025). Another major concern is lack of genuine empathy in automated interventions. Some chatbots simulate caring language as I see you, I understand but this can ring hollow or even deceptive, as the AI cannot truly understand the human’s pain. Effective therapy often hinges on the authentic therapeutic alliance between patient and therapist. If patients form bonds with chatbots under the illusion of understanding it could potentially slowly destroy trust or leave them feeling more isolated when the facade becomes apparent (Brown University, 2025). Maintaining a human touch, even if mediated by technology is crucial. AI algorithms learn from existing data which may carry societal biases. As a result, there is concern that a diagnostic AI might be more likely to misdiagnose or overdiagnose certain groups. One review noted that algorithms trained on historical psychiatric data risk recommending more severe diagnoses or treatments for Black patients compared to white patients with similar symptoms reflecting bias in the data (Torous et al., 2025). Ensuring diverse and representative training data, and auditing AI recommendations for bias, is essential so that technology helps close gaps in care rather than widen them. Protecting the highly sensitive data that digital tools collect. Apps and wearables

may gather intimate details mood logs, journals, physiological data that could be misused if not properly secured. There are fears about confidentiality breaches or data being sold for marketing. Users must retain control over their data. Strong encryption, transparent data policies and compliance with health privacy laws (like HIPAA) are non-negotiable for mental health tech. Another aim is establishing clear guidelines for the use of AI and digital interventions. Currently, many mental health apps and chatbots operate in a regulatory gray area, marketed as “wellness” products rather than medical devices. The American Psychological Association (APA) in 2025 even urged regulators to develop safeguards for AI chatbots posing as therapists, calling it a “dangerous trend” if left unchecked (Abrams, 2025). When an algorithm makes a clinical decision or a chatbot provides counseling, who is legally and ethically responsible for the outcome? The field is only beginning to grapple with these questions. Experts are calling for multidisciplinary collaboration technologists, clinicians, ethicists, and lawmakers to set standards so that innovation does not outpace safety and ethics (Brown University, 2025). The solution is not to reject technology but to implement it thoughtfully using evidence-based approaches, building in oversight and always keeping the human clinician in the loop for critical decisions. Encouragingly, many researchers and policy makers are aware of these issues and are working on guidelines for digital mental health. For instance the UK’s NHS has developed an evaluation framework for mental health apps to guide which can be recommended and professional organizations are starting to release ethics guidelines for AI in therapy.

CONCLUSION

The landscape of mental health is rapidly evolving, propelled by breakthroughs in biological science and technology, and enriched by the enduring wisdom of psychological practice. The future of mental health lies in integrating these domains to create a more effective, personalized, and humane approach to care. This means embracing cutting-edge tools from AI diagnostics to digital therapeutics while also safeguarding the psyche at the core of mental health. It means treating the whole person, not just their brain chemistry or their diagnostic label and recognizing that mental well-being arises from a dynamic interplay of biology, mind, relationships, and environment. Modern psychology’s attempt to become more “scientific” by focusing only on the tangible brain has provided many benefits but it also serves as a caution: if we take out the spirit from science, we risk losing the very essence of mental health. As Sotillos (2021) stated that the reductionism of contemporary psychology can become an “ideological tyranny” that blinds us to deeper truths . The challenge ahead is to resist such one-dimensional thinking. Technology should be our servant and not our master in mental health. AI and apps can increase the capacities of clinicians and support individuals between sessions but they must be deployed with rigorous evidence and ethical oversight. The recent findings of AI chatbots ethical violations make clear that we cannot offload human care entirely to machines (Brown University, 2025). Instead, the vision is a partnership between psychiatrists and psychologists working alongside algorithms, patients benefiting

from digital tools and compassionate human support. When an AI model flags a subtle pattern that a doctor might have missed, that's a win for integration. When a therapy app helps someone practice skills they learned in counseling, that's technology and psychology in sync. When a medication alleviates biochemical aspects of illness so that a person can fully engage in life and therapy, that's biology enabling psychological growth. In an ideal future, seeking help for mental health might be as normalized and straightforward as managing physical health aided by user-friendly technology, backed by solid science and destigmatized by greater public understanding. For example someone struggling with anxiety might first notice a prompt on their smartwatch suggesting deep-breathing exercises. If things worsen they easily connect via telehealth to a therapist who has their digitally recorded symptom patterns and can tailor the session accordingly. If needed, a psychiatrist consults genetic and AI data to choose a medication likely to work for that individual with minimal side effects. Throughout, the individual feels heard and in control, supported by a network of resources that respect their unique story which is the essence of a holistic approach. This integrative, multi-modal care would tackle mental health issues from all angles preventative, biological, psychological and social greatly improving outcomes. Realizing this future will require continued research, funding and thoughtful policies. It will also require humility and acceptance that no single field or algorithm has all the answers. As we stand on the brink of tremendous innovation, we would do well to remember the lessons of the past and the insight of humanistic thinkers. Mental health at its heart is about human experience and suffering, meaning and connection. Whatever new tools we develop they should serve to enhance the human-centered nature of care not eclipse it. If we can integrate technology and biology without losing the soul of psychology we can hopee that the future of mental health will be bright. A future where science and compassion are in full alliance and where every individual's inner voice can be heard, healed, and strengthened.

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MINDFULNESS AND SCHOOL SOCIAL WORK IN THE DIGITAL AGE: POLICY AND PRACTICE LESSONS FROM VIETNAM

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Abstract

The rapid expansion of digital technologies has transformed adolescents' social environments, generating both new opportunities and emerging mental health risks. This study examines how school social work can address student well-being and dropout risk in the digital age, with a focus on Vietnam. Using a mixed-methods design, the research integrates policy analysis, secondary data review, a survey of 300 lower secondary students in Ho Chi Minh City, and 19 semi-structured interviews with students and school staff. Quantitative findings indicate that dropout risk is shaped by multiple interacting factors, with academic pressure emerging as the strongest predictor, followed by economic constraints and digital stress. Mental health conditions – particularly sleep problems, anxiety, and depression – function as key mediating mechanisms linking external stressors to student disengagement. Qualitative evidence further illustrates how these pressures are experienced in everyday school life, highlighting gaps in access to psychosocial support services. The study finds that, despite recent policy advances, school-based mental health systems in Vietnam remain constrained by limited professional capacity and uneven service delivery. In response, the paper proposes a Mindful School Social Work Model that integrates mindfulness-based interventions with school social work practice to strengthen early intervention, resilience, and system-level coordination. The findings contribute to emerging research on digital well-being and offer policy-relevant insights for developing integrated, school-based mental health systems in rapidly changing educational contexts.

Keywords: school social work; student mental health; digital age; mindfulness;

INTRODUCTION

The rapid expansion of digital technologies has profoundly transformed the everyday lives of children and adolescents worldwide. The digital environment provides new opportunities for learning, communication, and social interaction; however, it also introduces emerging risks related to mental health and psychosocial well-being. Increasing exposure to social media, online communication, and digital learning environments has been associated with rising concerns about cyberbullying, academic pressure, social comparison, and emotional distress among students (Livingstone & Smith, 2014; Twenge, 2020).

Globally, mental health problems among adolescents have become a major public health and social policy concern. The World Health Organization estimates that approximately one in seven adolescents experiences a mental health condition, with anxiety and depression among the most common disorders (WHO, 2021). Schools have therefore become critical settings for early identification, prevention, and intervention in student mental health problems. Within this context, school social work has increasingly been recognized as an essential professional practice that supports students' psychosocial development, strengthens school–family–community partnerships, and provides early intervention for vulnerable students (Kelly et al., 2016).

In recent years, the role of school-based support systems has become even more important in the context of the digital society. Digital technologies have blurred the boundaries between school and online environments, making students more vulnerable to cyberbullying, online harassment, and digital addiction. These challenges require schools to adopt comprehensive and interdisciplinary approaches to student well-being that integrate educational, psychological, and social support services.

In Vietnam, the issue of student mental health has received growing attention from policymakers, educators, and researchers. The rapid socio-economic transformation, academic competition, and digital exposure among young people have created new psychosocial challenges for students. Reports indicate increasing concerns about school violence, cyberbullying, stress, and emotional difficulties among adolescents in Vietnamese schools (UNICEF Vietnam, 2023).

Recognizing these challenges, the Vietnamese government has progressively developed policy frameworks to strengthen school counseling and social work services in educational institutions. Early initiatives included Circular No. 31/2017/TT-BGDĐT on psychological counseling and Circular No. 33/2018/TT-BGDĐT on school social work, which established a legal foundation for providing psychosocial support to students. More recently, Circular No. 18/2025/TT-BGDĐT, issued by the Ministry of Education and Training of Vietnam (MOET), provides updated guidelines emphasizing interdisciplinary collaboration, early intervention, and the integration of digital communication in student support services (MOET, 2017, 2018, 2025).

The new policy framework reflects the government’s increasing commitment to improving student well-being and strengthening school-based support systems. The policy highlights the importance of providing counseling services through both face-to-face and online platforms, coordinating support among schools, families, and communities, and promoting students’ resilience and life skills. Despite these policy developments, the implementation of school social work and counseling services in Vietnam remains uneven. Many schools still face challenges related to limited professional staff, insufficient training, lack of standardized service models, and inadequate integration of digital mental health support systems. These challenges highlight the need for further research on how school social work can effectively respond to emerging mental health issues among students in the digital age.

The rapid expansion of digital technologies and social media has fundamentally transformed the social environment in which young people live, learn, and interact (OECD, 2019). While digital platforms create opportunities for communication, learning, and self-expression, they also generate new psychosocial risks, including anxiety, stress, cyberbullying, and social comparison (WHO, 2021; UNICEF, 2021). These challenges are increasingly associated with declining student well-being, school disengagement, and rising dropout risk among adolescents (Rumberger, 2011; Kearney, 2008).

1. RESEARCH GAP

Despite increasing attention, in Vietnam, school-based mental health systems remain underdeveloped, particularly in addressing digital-related risks and dropout prevention (MOET, 2020; Nguyen & Nguyen, 2022). Existing approaches often lack integration between policy, professional practice, and culturally appropriate interventions. Moreover, there is limited research examining how mindfulness-based approaches can be incorporated into school social work to reduce psychosocial stress and mitigate dropout risk, despite strong international evidence of their effectiveness (Zenner et al., 2014; Durlak et al., 2011).

2. RESEARCH OBJECTIVES

This study aims to:

- Analyze the current situation and causes of dropout risk among lower secondary school students in Binh Tri Dong Ward, Ho Chi Minh City.
- Examine student mental health challenges in the digital age.
- Evaluate the role and effectiveness of school social work in reducing dropout risk.
- Propose a Mindful School Social Work Model adapted to the Vietnamese context.

By integrating policy analysis and international literature on school social work, this study contributes to the growing body of research on student mental health and the development of school-based social services in Southeast Asia.

3. THEORETICAL FOUNDATIONS OF SCHOOL SOCIAL WORK AND MINDFULNESS IN THE DIGITAL AGE

3.1 Student Mental Health in the Digital Age

The rapid expansion of digital technologies has significantly reshaped adolescents' social environments, introducing both new opportunities and emerging psychosocial risks. A substantial body of research links digital engagement—particularly social media use—to increased levels of anxiety, depression, sleep disturbance, and low self-esteem among adolescents (Twenge, 2020; Odgers & Jensen, 2020). Cyberbullying and online social comparison are frequently identified as key mechanisms through which digital environments contribute to emotional distress and school disengagement (Livingstone & Smith, 2014; Kowalski et al., 2014).

However, this relationship is not uniformly negative. Some scholars argue that digital environments can also facilitate social connection, identity formation, and peer support, particularly for adolescents who may be marginalized in offline settings (Odgers & Jensen, 2020). This suggests that the impact of digital engagement on mental health is context-dependent, shaped by patterns of use, individual vulnerability, and social environment. Moreover, much of the existing literature is derived from Western contexts, raising concerns about its applicability to rapidly transforming educational and cultural settings such as Vietnam.

These tensions highlight the need to move beyond linear interpretations of digital risk toward a more nuanced understanding of how digital environments interact with structural and institutional factors to influence student well-being and educational outcomes.

3.2 School Social Work and Student Well-Being

School social work has been widely recognized as a central component of comprehensive school mental health systems, providing counseling, crisis intervention, and coordination between schools, families, and communities (Kelly et al., 2016). Grounded in ecological systems theory (Bronfenbrenner, 1979), this approach conceptualizes student well-being as the product of dynamic interactions across individual, relational, and institutional levels.

Despite its conceptual strengths, the effectiveness of school social work remains uneven across contexts. In many educational systems—particularly in developing countries—implementation is constrained by limited professional capacity, lack of standardized models, and insufficient integration within school

structures. Existing research often assumes the effectiveness of school-based interventions without critically examining the conditions under which they succeed or fail.

Furthermore, much of the literature emphasizes intervention outcomes while paying less attention to systemic barriers such as accessibility, trust, and coordination among stakeholders. This creates a gap between theoretical potential and practical implementation, suggesting the need for more context-sensitive and system-oriented approaches to school social work.

3.3 Development of School Social Work and Counseling in Vietnam

In Vietnam, school counseling and social work have been gradually institutionalized through a series of policy reforms, including Circulars No. 31/2017/TT-BGDĐT, 33/2018/TT-BGDĐT, and more recently 18/2025/TT-BGDĐT. These policies reflect a growing recognition of student mental health as a priority and emphasize interdisciplinary collaboration, early intervention, and the integration of digital communication in support services.

However, policy development has not been matched by consistent implementation. Empirical evidence suggests that school-based support systems remain fragmented, with significant gaps in professional training, service accessibility, and institutional coordination. In many cases, counseling services rely on non-specialized staff, limiting their effectiveness in addressing complex psychosocial issues.

This discrepancy between policy ambition and implementation reality points to a broader structural challenge: while the institutional framework exists, its operational capacity remains underdeveloped. As a result, students' psychosocial needs are often inadequately addressed, particularly in the context of emerging digital risks.

3.4 Mindfulness and Psychosocial Intervention

Mindfulness-based interventions (MBIs) have gained increasing attention as effective strategies for improving emotional regulation, reducing stress, and enhancing overall well-being among students (Zenner et al., 2014; Durlak et al., 2011). Rooted in both contemplative traditions and contemporary psychological science, mindfulness promotes awareness, attention control, and adaptive coping mechanisms.

Nevertheless, the growing popularity of mindfulness has also generated critical debate. Some scholars caution that the effectiveness of MBIs is highly dependent on implementation quality, cultural adaptation, and participant engagement. There is also concern that mindfulness may be applied as a "decontextualized" technique, focusing on individual coping while overlooking structural sources of stress such as academic pressure and socio-economic inequality.

In addition, most empirical evidence on mindfulness originates from Western educational contexts, raising questions about its transferability to different cultural and institutional settings. This highlights the importance of integrating mindfulness within broader systemic frameworks rather than treating it as a stand-alone intervention.

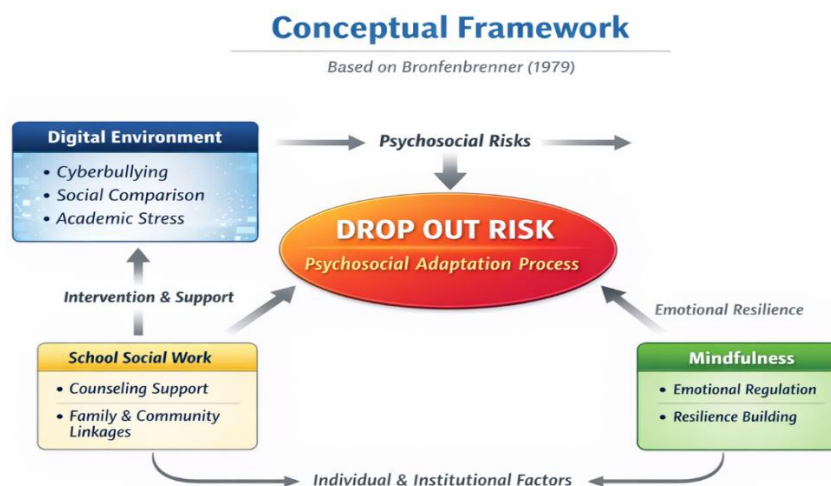
3.5 Toward an Integrated Psychosocial–Ecological Framework

Taken together, the existing literature provides valuable insights into digital risk, mental health, and school-based interventions. However, it remains fragmented across disciplinary and conceptual boundaries. Research on digital stress often focuses on individual psychological outcomes, while studies on school social work emphasize institutional responses, and mindfulness research concentrates on individual-level interventions.

This fragmentation limits the ability to fully capture the complex and multi-layered nature of dropout risk in the digital age. In particular, there is limited research examining how digital environments, mental health processes, and institutional support systems interact within specific socio-cultural contexts.

This study addresses these gaps by developing an integrated psychosocial–ecological framework that conceptualizes dropout risk as a dynamic process shaped by the interaction of structural pressures, digital stressors, and internal psychological mechanisms. By situating these dynamics within the Vietnamese educational context, the study contributes to both theoretical development and policy-relevant understanding of student well-being in rapidly changing societies.

3.6 The Conceptual Framework



This study conceptualizes dropout risk as a psychosocial adaptation process shaped by the interaction of digital risks, institutional support, and individual resilience within an ecological framework (Bronfenbrenner, 1979). Digital environments contribute to distress and disengagement through cyberbullying, social comparison, and academic pressure (Livingstone & Smith, 2014; Twenge, 2020), while global mental health trends further increase vulnerability (WHO, 2021; Rumberger, 2011; Kearney, 2008).

School social work serves as a central intervention mechanism, supporting early identification, counseling, and school–family–community linkages (Kelly et al., 2016; Nand, 2017; Laurén-Knuutila et al., 2026), particularly in the Vietnamese context where student well-being concerns are rising (UNICEF Vietnam, 2023).

At the individual level, mindfulness strengthens emotional regulation and resilience, reducing dropout risk (Phan et al., 2022; Nagpal & Radliff, 2024; D’Souza & Smyth, 2025). Overall, dropout risk is understood as a dynamic, multi-level process, rather than an individual deficit (Woolcott et al., 2025).

4. METHODOLOGY

4.1 Research Design

This study employs a mixed-methods design combining quantitative surveys, qualitative interviews, and policy analysis to examine the role of school social work in addressing student mental health and dropout risk in Vietnam’s digital age. A convergent parallel approach was used, collecting quantitative and qualitative data simultaneously and integrating them at the interpretation stage (Creswell & Plano Clark, 2018). Policy analysis focused on institutional frameworks and key national policies issued by the Ministry of Education and Training, including Circulars No. 31/2017/TT-BGDĐT, 33/2018/TT-BGDĐT, and 18/2025/TT-BGDĐT (Bacchi, 2009).

4.2 Sampling and Participants

The study was conducted in three lower secondary schools in Ho Chi Minh City. A stratified sampling strategy ensured representation across grades 6–9, with 25 students randomly selected per grade, totaling 300 participants. For the qualitative component, 19 semi-structured interviews were conducted with students, teachers, and school staff, selected purposively to capture diverse perspectives, including those at risk of disengagement.

4.3 Data Collection

Quantitative Survey: A structured questionnaire assessed digital experiences, mental health, psychosocial support, and dropout risk using Likert-scale items (1–5). The instrument was pilot-tested for clarity and contextual relevance. *Qualitative Interviews:* Semi-structured interviews explored academic pressure,

digital stress, and access to support systems. Teacher and staff interviews examined institutional capacity and challenges. All interviews were recorded (with consent), transcribed, and analyzed thematically. *Policy and Secondary Data:* Policy documents, government reports, and international datasets (UNICEF, WHO) were reviewed to contextualize findings.

Variable Operationalization

Variable	Definition	Measurement	Scale	Source
Dropout risk	Likelihood of disengagement	Composite index (absenteeism, low engagement, intention to leave)	Likert 1–5	Rumberger (2011)
Academic pressure	Stress from workload/expectations	3–5 items (exams, homework)	Likert 1–5	(Creswell & Plano Clark, 2018).
Economic constraints	Financial difficulties	Items on work, financial stress, lack of resources	Likert 1–5	Adapted
Digital stress	Stress from digital environments	Items on cyberbullying, social comparison, overload	Likert 1–5	Twenge (2020); Odgers & Jensen (2020)
Mental health	Psychological distress	Symptoms: anxiety, depression, sleep problems, low self-esteem	Likert 1–5	WHO (2021)
Psychosocial support	Availability of support services	4 items: counseling access, trust, availability, responsiveness	Likert 1–5	Self-developed

Composite variables were calculated by averaging item scores. Reliability was tested using Cronbach's alpha.

Quantitative Analysis: survey data were analyzed with SPSS. Descriptive statistics identified overall patterns, while logistic regression examined predictors of dropout risk (academic pressure, economic constraints, digital stress, psychosocial support). Model fit was assessed with Nagelkerke R^2 , significance at $p < .05$. *Qualitative Analysis:* Interview data were analyzed using thematic coding, identifying patterns of psychosocial stress, coping strategies, and institutional support. These findings contextualized and enriched quantitative results.

4.4 Integration of Methods

Quantitative and qualitative findings were integrated at the interpretation stage to develop a psychosocial–ecological explanation of dropout risk, linking structural factors with psychological processes and institutional conditions.

5. KEY FINDINGS

Dropout risk can be conceptualized as a multidimensional psychosocial process shaped by the interaction of academic pressure, economic constraints, digital stress, and institutional support. Evidence from lower secondary students ($n = 300$) indicates that these factors operate cumulatively and interactively rather than independently, reflecting the multivariate nature of dropout risk.

To clarify the overall pattern and relative importance of these factors, descriptive analysis shows that the overall level of risk is moderate ($M = 3.2/5$). Among the identified drivers, academic pressure (40%, $M = 3.8$) and economic constraints (30%, $M = 3.5$) are the most prominent, followed by digital stress ($M = 3.0$) and limited psychosocial support ($M = 2.8$).

Taken together, these findings underscore the need to move beyond single-factor explanations toward an integrated psychosocial–ecological model that captures both structural conditions and emerging digital influences on student disengagement.

Table 1. Logistic Regression Results of Dropout Risk Predictors

Predictor	β (Coef.)	SE	Odds Ratio (OR)	p-value
Academic pressure	1.25	0.32	3.49	< .01
Family economic constraints	0.85	0.28	2.34	< .05
Digital stress	0.65	0.26	1.91	< .05
Lack of psychosocial support	0.40	0.23	1.49	= .08
Constant	-1.75	0.41	—	< .001

Logistic regression analysis indicates that dropout risk is shaped by multiple interacting factors (Nagelkerke $R^2 = 0.41$; classification accuracy = 75%). Academic pressure emerges as the strongest predictor ($\beta = 1.25$, $OR = 3.49$, $p < .01$), suggesting that students experiencing high academic demands are more than three times as likely to fall into the high-risk group. Family economic constraints also show a significant effect ($\beta = 0.85$, $OR = 2.34$, $p < .05$), highlighting the influence of socio-economic disadvantage on school persistence.

Importantly, digital stress is both statistically significant ($\beta = 0.65$, $OR = 1.91$, $p < .05$) and substantively relevant, reinforcing its growing role in shaping student disengagement. This is further supported by inferential analysis indicating a significant association between digital stress and dropout risk (χ^2 , $p < .05$). In contrast, lack of psychosocial support demonstrates a weaker and marginally significant effect ($\beta = 0.40$, $OR = 1.49$, $p = .08$); however, its positive coefficient suggests that insufficient support may exacerbate the impact of other risk factors rather than acting independently.

Qualitative evidence provides critical insight into the mechanisms underlying these statistical relationships. Students' narratives reveal how structural pressures are experienced and internalized in everyday life. Academic pressure manifests as a gradual loss of motivation "*Low grades leading to lost motivation*", reflecting reduced self-efficacy and emotional exhaustion. Economic hardship translates into competing responsibilities "*Need to work, resulting in less time for school*", disrupting learning continuity. Digital stress is experienced as persistent emotional strain "*Social media creating stress and pressure*", while institutional gaps are reflected in the absence of support "*No one to talk to at school*". These

accounts illustrate that dropout risk unfolds as a cumulative and experiential process rather than a discrete event.

The distribution of digital stress further contextualizes these findings. A substantial majority of students (80%) report at least moderate levels of digital stress, including 40% at moderate, 30% at high, and 10% at very high levels. This pattern indicates that digital pressure is not an isolated phenomenon but a widespread condition. When interpreted alongside regression results ($\beta = 0.65$, $OR = 1.91$, $p < .05$), the data suggest a dose–response relationship in which increasing levels of digital stress correspond to progressively higher dropout risk. Notably, students in the highest category—characterized by cyberbullying, chronic anxiety, and sleep disruption—represent a particularly vulnerable subgroup where cumulative psychosocial risks are most pronounced.

Qualitative insights further illuminate these dynamics across multiple perspectives. From the student viewpoint, digital environments generate continuous psychosocial strain through social comparison *“I feel I’m not good enough”*, cyberbullying *“I don’t want to go to class”*, and persistent academic notifications that contribute to fatigue *“I stay up late and feel exhausted in class”*. Teachers observe declining concentration and increased cognitive fatigue associated with excessive device use, while also highlighting the limited capacity of schools to regulate online behavior. At the institutional level, counselors report delayed disclosure of online harm and a shortage of trained personnel, revealing a critical gap between emerging digital risks and existing support systems.

Taken together, the integration of quantitative and qualitative evidence supports a psychosocial mediation model of dropout risk. Specifically, digital and structural pressures operate through interconnected pathways: digital stress contributes to psychological distress (anxiety, depression, low self-esteem), which in turn leads to functional disruption (sleep problems, reduced concentration, fatigue), ultimately resulting in school disengagement and increased dropout risk. Within this framework, mental health factors function as key proximal mechanisms translating external stressors into behavioral outcomes.

These findings are consistent with the multidimensional dropout framework (Rumberger, 2011) and ecological perspectives on student development, which emphasize the interaction of individual, family, social, and institutional factors. In the Vietnamese context, recent policy reforms by the Ministry of Education and Training of Vietnam—including Circulars 31/2017/TT-BGDĐT, 33/2018/TT-BGDĐT, and 18/2025/TT-BGDĐT—have established a formal foundation for integrating counseling and school social work into educational settings. However, the persistence of academic pressure, socio-economic inequality, and digital stress suggests that implementation gaps remain significant, particularly in terms of professional capacity and accessibility of psychosocial services.

6. MENTAL HEALTH INDICATORS AND PSYCHOSOCIAL IMPLICATIONS

Table 2. Psychosocial Determinants of Dropout Risk: Effects of Mental Health Indicators

Predictor	Coefficient (β)	Odds Ratio ($\text{Exp}(\beta)$)	p-value
Sleep problems	1.48	4.41	< .001
Depression	1.35	3.87	< .001
Anxiety	1.14	3.13	< .001
Low self-esteem	0.95	2.58	.003

The findings reveal a substantial prevalence of mental health concerns among students, with sleep problems (40%) emerging as the most common, followed by anxiety (35%), depression (28%), and low self-esteem (25%). This distribution indicates that psychosocial distress is widespread and often manifests initially through behavioral and physiological symptoms—particularly sleep disturbances—before developing into more complex emotional conditions.

Logistic regression analysis confirms that mental health factors are strong predictors of dropout risk. Sleep problems emerge as the most influential factor ($\beta = 1.48$, $\text{OR} = 4.41$, $p < .001$), suggesting that students experiencing sleep disturbances are more than four times as likely to fall into the high-risk group. This reflects the critical role of sleep in maintaining cognitive functioning, concentration, and emotional regulation. Depressive symptoms also show a substantial effect ($\beta = 1.35$, $\text{OR} = 3.87$, $p < .001$), indicating that emotional withdrawal and reduced motivation significantly undermine school engagement. Anxiety further increases dropout risk ($\beta = 1.14$, $\text{OR} = 3.13$, $p < .001$), as persistent worry and heightened alertness—often linked to continuous digital stimulation—impair attention and promote avoidance behaviors. Although comparatively weaker, low self-esteem remains a significant predictor ($\beta = 0.95$, $\text{OR} = 2.58$, $p = .003$), suggesting that diminished self-worth reduces resilience in the face of academic challenges. Taken together, these results position mental health as a key proximal mechanism through which students become vulnerable to disengagement.

Qualitative evidence deepens this interpretation by illustrating how these mental health challenges are experienced in the digital age. Students consistently describe a pattern of continuous psychological pressure associated with constant connectivity, social comparison, and prolonged online engagement. Anxiety is reflected in statements such as “I feel nervous every time I open my phone” and “Notifications make me anxious,” indicating a persistent state of cognitive overload. Depressive experiences are linked to social comparison and perceived isolation, as students report feeling “empty” and disconnected from both online and offline environments. Sleep disruption emerges as a direct consequence of digital habits, with students describing late-night screen use and difficulty disengaging from online content, leading to fatigue and reduced classroom functioning. Meanwhile, low self-esteem is closely associated with exposure to idealized online images, which undermines students’ sense of competence and belonging.

Integrating both quantitative and qualitative evidence, the findings strongly support a comprehensive psychosocial mediation model in which external stressors, particularly digital pressures and sustained academic demands, are progressively internalized through various mental health conditions before ultimately translating into student disengagement and increased dropout risk. Digital stress contributes to sleep disruption, which in turn significantly impairs cognitive functioning and daily academic performance; at the same time, it intensifies symptoms of anxiety and depression, thereby undermining students' motivation, emotional stability, and capacity for self-regulation; moreover, it gradually erodes self-esteem, weakening students' academic confidence, sense of competence, and long-term persistence. Within this complex pathway, sleep problems emerge as an early and sensitive indicator of psychosocial distress, while anxiety and depression function as key amplifying mechanisms that accelerate and deepen the process of disengagement over time.

Overall, the findings indicate that dropout risk should be understood not merely as an educational outcome but as a dynamic and progressive psychosocial process shaped by the interaction between structural pressures and internal psychological responses. While academic pressure remains the dominant driver, the increasing salience of digital stress points to a more complex risk landscape spanning both offline and online environments. This perspective shifts the analytical focus from observable academic performance to the underlying mechanisms of student well-being, with mental health functioning as a central pathway linking external stressors to educational vulnerability. Addressing this challenge therefore requires integrated, multi-level interventions that combine academic support, socio-economic assistance, digital well-being strategies, and the strengthening of school-based social work systems.

7. IMPLICATIONS FOR POLICY AND PRACTICE

These findings highlight the urgent need for integrated, school-based mental health interventions as a central strategy to reduce dropout risk. Early screening for sleep problems and emotional distress should be prioritized as entry points for identifying at-risk students, given their strong predictive value.

Expanding counseling and school social work services in alignment with policy frameworks of the Vietnam Ministry of Education and Training, such as Circulars 31/2017 and 18/2025, is essential to ensure timely, accessible, and professional psychosocial support. In parallel, schools should implement preventive programs that strengthen emotional regulation, resilience, and self-esteem, particularly through mindfulness-based approaches and digital well-being interventions.

Beyond individual-level responses, the findings emphasize the necessity of a multi-level intervention approach. Effective strategies must simultaneously address academic pressure, socio-economic constraints, and digital stressors, rather than treating dropout as an isolated educational issue.

Strengthening institutional capacity—especially the professionalization of school social work systems—therefore becomes a critical policy priority, enabling schools to respond more effectively to the complex and evolving psychosocial risks shaping student disengagement in the digital age.

8. GAPS IN SCHOOL SUPPORT SYSTEMS

This table summarizes key systemic barriers to school social work services across grade levels, focusing on workforce shortages, service accessibility, coordination, and trust-related issues. It highlights consistent institutional constraints affecting the availability and effectiveness of psychosocial support.

Table 3. Systemic Barriers to School Social Work Services by Grade Level (n = 300)

Cause	Grade 6 (75 students)	Grade 7 (75 students)	Grade 8 (75 students)	Grade 9 (75 students)	Total (300 students)
Shortage of trained professionals	30 (40%)	28 (37%)	32 (43%)	30 (40%)	120 (40%)
Limited accessibility of services	25 (33%)	22 (29%)	20 (27%)	23 (31%)	90 (30%)
Weak coordination between schools, families, and communities	15 (20%)	18 (24%)	15 (20%)	12 (16%)	60 (20%)
Other (stigma, lack of trust)	5 (7%)	7 (10%)	8 (10%)	10 (13%)	30 (10%)

The findings identify substantial structural and access-related barriers to the effective delivery of school social work services across grade levels (n = 300). The most prominent constraint is the shortage of trained professionals (40%), followed by limited service accessibility (30%), weak school–family–community coordination (20%), and cultural barriers such as stigma and lack of trust (10%). These patterns remain relatively consistent across grades, particularly for workforce shortages, indicating a system-wide institutional constraint rather than cohort-specific variation.

However, qualitative evidence reveals important grade-level nuances in how these barriers are experienced. At the lower secondary level, students report uncertainty in accessing support “I don’t know who to talk to when I feel sad”, indicating gaps in visibility and entry points to services. At the family level, parents highlight limited communication and information “We don’t know how to access support”, reflecting access and outreach barriers. Teachers emphasize insufficient professional training “We have not been trained to identify at-risk students early”, pointing to capacity constraints, while school health staff underscore resource limitations “Resources are insufficient to meet demand”. Among older students, concerns shift toward inequitable access and limited participation “Support activities exist but not everyone can join”, suggesting emerging issues of selective provision and reduced inclusivity.

From an analytical perspective, these results point to a multi-layered system of bottlenecks spanning institutional (capacity), access (availability and utilization), relational (coordination), and cultural (trust) dimensions. These constraints also help explain the relatively modest effect of psychosocial support

observed in the regression model ($\beta = 0.40$, $p = .08$), suggesting that limited availability, uneven accessibility, and low utilization reduce its measurable impact.

9. THE ROLE OF MINDFULNESS AND SCHOOL SOCIAL WORK AND THE MINDFUL SCHOOL SOCIAL WORK MODEL

Mindfulness practices play a critical role in strengthening school social work by enhancing emotional regulation, reducing psychological distress, and improving students' capacity for sustained engagement in learning. Grounded in both contemplative traditions (e.g., Thích Nhất Hạnh) and contemporary psychological science, mindfulness enables students to develop awareness, attention control, and adaptive coping strategies—key competencies for navigating academic pressure and digital stress. A growing body of empirical research demonstrates that mindfulness-based interventions (MBIs) are associated with significant reductions in anxiety, depression, and stress, alongside improvements in cognitive functioning, emotional regulation, and overall well-being (Zenner et al., 2014; Durlak et al., 2011).

When integrated into school social work, mindfulness provides a mechanism to address the underlying psychosocial pathways of dropout risk rather than merely responding to observable behavioral outcomes. This integration shifts the logic of intervention from reactive, problem-focused responses toward preventive and developmental approaches. In line with ecological and multidimensional frameworks (Urie Bronfenbrenner; Russell Rumberger), mindfulness operates across multiple levels: it strengthens individual emotional regulation (micro-level), enhances relational dynamics within classrooms and families (meso-level), and contributes to a more supportive and responsive school climate (macro-level).

In practice, integrating mindfulness into school social work generates three interrelated outcomes. First, it addresses root psychosocial mechanisms—such as emotional dysregulation, stress reactivity, and low self-esteem—that mediate the relationship between external stressors and disengagement. Second, it transforms support systems from reactive intervention toward early identification and prevention, enabling timely responses before risks escalate into dropout. Third, it builds resilience and adaptive capacity, allowing students to sustain engagement despite academic, social, and digital challenges. Empirical studies support these effects: Zenner et al. (2014) demonstrate improvements in emotional regulation and academic performance; Kabat Zinn (2003) highlights mindfulness as a core mechanism for stress reduction and self-regulation; and Schonert Reichl et al. (2015) show enhanced prosocial behavior and reduced emotional problems among adolescents.

Building on this evidence, the Mindful School Social Work Model is proposed as an integrated conceptual framework that operationalizes mindfulness within school systems. Rather than treating mindfulness as a stand-alone intervention, the model embeds it as a guiding principle for the design and delivery of school

social work services, enabling a shift from fragmented, reactive support toward a coherent, preventive, and system-oriented approach.

Conceptually, the model bridges psychosocial processes and institutional practice by aligning mindfulness-based mechanisms with key dimensions of school social work. At the individual level, mindfulness enhances emotional regulation, attention, and self-awareness, thereby mitigating proximal risk factors such as anxiety, depression, and disengagement. At the relational level, it improves the quality of interactions among students, teachers, and families through greater empathy, communication, and responsiveness. At the institutional level, mindfulness informs the development of supportive environments characterized by psychological safety, inclusivity, and early intervention capacity. This multi-level integration extends ecological systems theory (Urie Bronfenbrenner, 1979) and advances multidimensional dropout frameworks (Russell Rumberger, 2011) by explicitly incorporating internal psychosocial regulation as a central explanatory mechanism.

Importantly, the model directly addresses the systemic gaps identified in this study—namely capacity, access, coordination, and trust. Mindfulness-based professionalization enhances workforce capacity by integrating technical competencies with reflective and emotionally attuned practice. Mindful access systems embed support within everyday school contexts (e.g., classroom-based activities, peer support), reducing barriers to service utilization. Mindful ecological integration strengthens coordination across school–family–community systems, ensuring continuity of care. Finally, mindful safe spaces address stigma and distrust by fostering non-judgmental and emotionally supportive environments that encourage help-seeking behavior.

Through this alignment, the Mindful School Social Work Model reconceptualizes dropout prevention as a psychosocial and systemic process, in which internal regulation and external support structures are mutually reinforcing. Mindfulness thus functions not only as an intervention technique but as a foundational logic for transforming school social work into a proactive, preventive, and resilience-oriented system. This model offers a scalable framework for addressing the complex interplay between digital stress, mental health, and student engagement in contemporary educational contexts.

10. DISCUSSION

This study demonstrates that dropout risk among lower secondary school students in Vietnam is shaped by the interaction of academic pressure, socio-economic constraints, digital stress, and institutional support systems. Student disengagement emerges through cumulative and interconnected influences across individual, relational, and structural levels. This finding is consistent with ecological systems theory (Bronfenbrenner, 1979) and multidimensional dropout frameworks (Rumberger, 2011). Importantly, this study extends these perspectives by incorporating digital environments as a critical and increasingly influential layer in contemporary educational contexts (Woolcott et al., 2025; OECD, 2019).

Among the identified factors, academic pressure emerges as the strongest predictor of dropout risk. In the Vietnamese context, high-stakes examinations and strong societal expectations intensify this pressure, making it a structural feature of the education system. When academic demands exceed students' coping capacity, they may experience emotional distress, reduced self-efficacy, and eventual disengagement. This supports the argument that dropout should be understood as a psychosocial response to sustained performance-related stress (OECD, 2019).

Family economic constraints also significantly contribute to dropout risk, reflecting broader patterns of socio-economic inequality. International literature demonstrates that disadvantage limits access to educational resources and increases the likelihood of school discontinuation (Rumberger, 2011; WHO, 2021). In rapidly developing contexts such as Vietnam, these inequalities may be further amplified by uneven access to educational and social support systems, highlighting the need for integrated policy approaches that link education with social protection.

A key contribution of this study is the identification of digital stress as an independent predictor of dropout risk. Emerging research links excessive online engagement to anxiety, depression, and reduced academic functioning (Livingstone & Smith, 2014; Twenge, 2020). Digital stress—including cyberbullying, social comparison, and constant connectivity—represents a new ecological layer that extends beyond traditional school and family environments. In this sense, dropout in the digital age should be understood as a hybrid phenomenon shaped by both offline and online experiences.

Beyond identifying key drivers, the findings highlight that dropout risk operates through psychosocial mediation mechanisms. External stressors—academic, economic, and digital—are internalized through mental health conditions such as anxiety, depression, sleep disruption, and low self-esteem. These results are consistent with research demonstrating that emotional distress and poor mental health are closely linked to school disengagement (Durlak et al., 2011; WHO, 2021). Mental health functions as a proximal pathway through which structural pressures are translated into behavioral outcomes, supporting the view that dropout represents a process of psychosocial maladaptation rather than a discrete event.

At the same time, the findings reveal systemic gaps in the provision of psychosocial support. Although support services demonstrate a protective role, their modest statistical effect reflects limitations in capacity, accessibility, coordination, and trust. This observation is consistent with research on school social work, which emphasizes that effectiveness depends not only on intervention design but also on the availability of trained professionals and integration within school systems (Kelly et al., 2016; Nand, 2017). Qualitative evidence further illustrates how these gaps are experienced in practice, reinforcing the argument that psychosocial support remains underutilized due to systemic constraints.

In response to these challenges, the study provides a strong empirical basis for operationalizing the Mindful School Social Work Model as a system-level solution. By mapping identified gaps onto targeted

interventions, the model proposes a shift from fragmented and reactive services toward integrated, preventive, and resilience-oriented systems. The integration of mindfulness into school social work is supported by evidence demonstrating its effectiveness in enhancing emotional regulation, reducing stress, and improving well-being (Kabat-Zinn, 2003; Zenner et al., 2014; Schonert-Reichl et al., 2015). At a systems level, mindfulness can enhance individual coping, relational dynamics, and institutional responsiveness, aligning with ecological approaches to intervention.

From a policy perspective, the findings suggest that effective dropout prevention requires more than identifying at-risk students; it demands a redesign of the broader support system. While existing policy frameworks in Vietnam have established a foundation for integrating counseling and social work into schools, further reforms are needed to address structural pressures and emerging risks. International evidence suggests that comprehensive approaches—combining academic reform, social protection, and mental health support—are most effective in reducing dropout rates (OECD, 2019; WHO, 2021). Strengthening the professionalization of school social work and integrating digital well-being into educational policy are critical priorities.

The study also contributes theoretically by advancing a psychosocial–ecological model of dropout that integrates structural conditions, emerging digital risks, and internal psychological processes. By positioning mental health as a mediating mechanism and digital environments as an ecological layer, the findings extend existing frameworks to better capture the complexity of student experiences in the digital age. This integrated perspective responds to recent calls in the literature to move beyond single-factor explanations toward more holistic and context-sensitive models of educational vulnerability (Woolcott et al., 2025).

Overall, the findings highlight the need for coordinated, multi-level interventions that address academic pressure, socio-economic inequality, digital well-being, and student mental health simultaneously. The Mindful School Social Work Model offers a context-sensitive framework for strengthening school-based support systems and promoting sustainable student engagement in contemporary educational settings.

11. LIMITATIONS AND FUTURE RESEARCH

This study offers important insights into the psychosocial mechanisms of dropout risk; however, several limitations should be acknowledged. First, the cross-sectional design restricts causal inference, as relationships among academic pressure, socio-economic constraints, digital stress, and mental health cannot be temporally confirmed. Future research should adopt longitudinal designs to better capture causal pathways and the dynamic evolution of student disengagement.

Second, the reliance on self-reported data may introduce response bias. Although qualitative evidence supports the findings, future studies should incorporate multi-informant and objective data sources (e.g., teachers, parents, academic records, digital usage metrics) to enhance validity.

Third, the sample is limited to an urban context in Ho Chi Minh City, which may constrain generalizability. Expanding research to diverse regional and socio-economic contexts is necessary to capture variability in dropout processes.

Fourth, the construct of digital stress is measured broadly; future research should disaggregate its dimensions (e.g., cyberbullying, social comparison, information overload) to better understand differential effects.

Finally, while the Mindful School Social Work Model is theoretically grounded, it has not yet been empirically tested. Future studies should employ intervention-based and experimental designs to evaluate its effectiveness.

Overall, advancing this field requires longitudinal, multi-method, and intervention-oriented research that integrates psychological, social, and digital dimensions of student experience.

12. CONCLUSION AND IMPLICATIONS

This study set out to examine dropout risk among lower secondary school students in Vietnam through a psychosocial and ecological lens, with particular attention to the role of mental health, digital stress, and school social work systems. The findings demonstrate that dropout risk is best understood not as a single outcome driven by isolated factors, but as a multidimensional and cumulative process shaped by the interaction of academic pressure, socio-economic constraints, digital environments, and institutional support structures.

First, the analysis confirms that academic pressure remains the dominant structural driver of dropout risk. However, it does not operate in isolation. Instead, it interacts with economic hardship and digital stress, forming an interconnected system of pressures that progressively undermine student engagement. This supports a shift away from linear explanations toward a psychosocial–ecological model, in which disengagement emerges gradually through overlapping and reinforcing stressors.

Second, the findings highlight that mental health functions as a central mediating mechanism in this process. High prevalence rates of sleep problems, anxiety, depression, and low self-esteem indicate that psychosocial distress is widespread among students. These conditions are not merely correlates but key pathways through which external pressures are internalized, ultimately translating into reduced academic functioning and increased dropout risk. In particular, digital stress—manifested through social

comparison, cyberbullying, and constant connectivity—emerges as a distinct and significant contributor to psychological strain in the digital age.

Third, the study finds that while school social work and counseling systems have clear protective potential, their current effectiveness is limited by systemic constraints. Shortages of trained professionals, restricted service accessibility, weak coordination between stakeholders, and persistent stigma significantly reduce the reach and impact of psychosocial support. These findings suggest that the challenge lies not in the conceptual validity of school social work, but in its uneven institutionalization and limited operational capacity.

In response to these gaps, the study proposes the Mindful School Social Work Model as an integrated framework for strengthening school-based support systems. The model reconceptualizes intervention as a preventive, multi-level process, combining mindfulness-based practices with core functions of school social work. At the individual level, mindfulness supports emotional regulation and stress management; at the relational level, it enhances communication and trust; and at the institutional level, it contributes to the development of more responsive and inclusive school environments. Importantly, the model addresses identified system constraints by improving accessibility, strengthening coordination, and fostering psychologically safe spaces that encourage help-seeking behavior.

Taken together, the findings suggest that dropout risk in the digital age should be understood as a dynamic process of psychosocial adaptation, in which structural and digital pressures are mediated through mental health pathways. While Vietnam has made important progress in establishing policy frameworks for school counseling and social work, implementation gaps remain the primary barrier to effectiveness. Addressing dropout risk therefore requires a shift from fragmented and reactive interventions toward integrated, system-level strategies that combine educational reform, social support, digital well-being, and strengthened mental health services.

From a policy and practice perspective, this implies prioritizing early identification of psychosocial risk, expanding professional capacity in school social work, embedding mental health support within everyday school environments, and explicitly addressing digital stress as an emerging dimension of student well-being. The proposed model offers a scalable and context-sensitive approach to advancing these goals, contributing to both theoretical development and practical innovation in the field of school-based mental health and dropout prevention.

13. PRACTICAL AND POLICY IMPLICATIONS

The study underscores several key implications for practice and policy:

- Strengthening school-based mental health systems through early screening, counseling services, and continuous psychosocial support

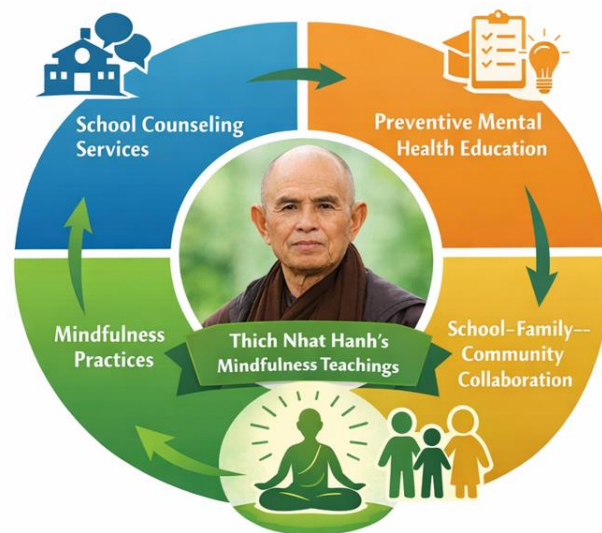
- Reducing structural pressures, particularly academic overload and socio-economic barriers, through coordinated education and social protection policies
- Addressing digital stress as an emerging risk factor by integrating digital well-being into school programs
- Enhancing the professionalization of school social work, ensuring trained personnel, accessible services, and effective coordination mechanisms

These directions align with current educational reforms in Vietnam while highlighting the need to move from policy formulation to effective system-level implementation.

14. PROPOSED MODEL

The **Mindful School Social Work Model** emphasizes: Mindfulness-based interventions, Integrated school-based services, Early identification of at-risk students and Multi-stakeholder collaboration.

Mindful School Social Work Model for Vietnam



To operationalize the **Mindful School Social Work Model** for lower secondary school students in Binh Tri Dong Ward, Ho Chi Minh City, the following context-specific components are proposed:

The Mindful School Social Work Model

Building on the empirical findings, this study proposes the Mindful School Social Work Model as an integrated framework for dropout prevention. In the context of lower secondary schools in Binh Tri Dong Ward, the model can be operationalized through four core components:

1. Mindfulness-based interventions

Introduce brief, age-appropriate mindfulness practices into daily school routines, such as guided breathing exercises at the beginning of classes, weekly sessions, and integration into life skills education. These practices support emotional regulation, reduce stress, and enhance students' capacity to cope with academic and digital pressures.

2. Integrated school-based services

Establish a structured school social work system that embeds counseling, mental health screening, and case management into everyday school activities. Services should be accessible within classrooms and school environments rather than relying solely on referral mechanisms.

3. Early identification of at-risk students

Develop periodic screening systems using brief psychosocial assessment tools. Teachers and school staff should be trained to identify early warning signs, including declining academic performance, absenteeism, sleep disturbances, and behavioral changes, enabling timely and tiered interventions.

4. Multi-stakeholder collaboration

Strengthen coordination among schools, families, local authorities, and community organizations. This includes parent engagement, partnerships with health and social services, and community-based support networks to ensure continuity of care across contexts.

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Global Shifts: Geopolitics, Security, and Peace in Times of Uncertainty

WHEN DEMOCRACY IS AILING: THE EROSION OF TRUST AND PERFORMANCE

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Abstract

Contemporary democracies face a multiple crisis characterized by twin processes of institutional trust erosion and governance performance deficit. Drawing on data from the European Social Survey (ESS) and the World Values Survey (WVS), the article documents a persistent and widening gap between citizens' abstract aspirations for democratic governance and their evaluations of its practical delivery. The article further questions the sources of democratic fragility – including political distrust, the erosion of civic participation – and engages with the competing diagnoses advanced by L. Diamond and J.D. Vance regarding the nature and direction of democratic threats. The central argument holds that restoring democratic vitality requires simultaneous attention to performance, legitimacy, and democratic participation.

Keywords: democratic backsliding; institutional trust; legitimacy; governance performance; civic participation.

INTRODUCTION

When we talk about democracy today, we cannot be optimistic, but we must be cautious. We live in times of local and global turbulence, and as social researchers we must – or at least try – to understand the causes of this turbulence: what is happening, and why?

In the early post-Cold War period, this question appeared largely settled. Francis Fukuyama famously argued in *The End of History and the Last Man* that liberal democracy represented the endpoint of ideological evolution – a final form of human government (Fukuyama, 1992). Yet rather than culminating in a stable liberal order, the decades since have instead ushered in an era increasingly defined by democratic backsliding and systemic fragility.

The contemporary democratic predicament is paradoxical. Three decades after the so-called "third wave" of democratization seemed to confirm liberal democracy as the terminus of political development, democratic institutions across the globe are in visible distress. Confidence in parliaments, political parties, and governments has collapsed in survey after survey. Illiberal populism commands electoral majorities in countries once regarded as consolidated democracies. Executive aggrandizement proceeds through constitutional means. And a growing share of citizens – particularly younger cohorts – express indifference or even preference for non-democratic alternatives to democratic governance.

The research question of this article is: to what extent does the growing gap between citizens' abstract support for democracy and their decreasing satisfaction with its practical implementation intensify the crisis of legitimacy, and how can the erosion of trust and declining civic engagement fuel the democratic backsliding?

This article places these developments within two interrelated analytical frameworks: democratic backsliding and the decline of democracy. Still, these concepts are conceptually distinct, and each illustrates various dimensions of the crisis. Furthermore, empirical data are analyzed within a theoretical framework, focusing on the link between performance and legitimacy as outlined by L. Diamond and J. D. Vance's interpretation of the "internal threat" to democracy.

The article employs a comparative empirical analysis based on two major international survey programs – the European Social Survey (ESS) and the World Values Survey (WVS) – to identify long-term and cross-regional trends related to democratic attitudes, trust in institutions, and civic engagement. The analytical strategy is primarily descriptive and comparative in nature: the survey indicators are investigated over time (long-term trends), by region (Northern, Western, Southern, and Central and Eastern Europe; Latin America; South and East Asia) and by thematic areas, including satisfaction with democracy, trust in institutions, civic engagement, and assessments of government performance.

1. CONCEPTUAL FRAMEWORK: DEMOCRATIC BACKSLIDING AND DEMOCRATIC VALUES

In summary, the relationship between democratic backsliding, the decline of democracy, and values across civilizations is complex and multifaceted. Understanding how different civilizations interpret and adapt democratic values within their unique cultural, historical, and philosophical contexts is crucial for addressing the challenges posed by backsliding and decline in diverse societies. It requires nuanced approaches that respect cultural differences while upholding fundamental democratic principles.

The conceptual framework of this article is based on a fundamental observation: history is not a linear or closed progression from one political and social order to a better one. Especially following the collapse of the “Arab Spring,” many democratic states around the world have entered a period of turmoil. Recent events show that there is no light at the end of this tunnel of democratic turmoil; moreover, trends toward autocracy have become even more pronounced. In today’s world, we are witnessing a trend of democratic backsliding—or even a democratic decline. And several questions are fundamental here. First, what are the main factors and mechanisms driving democratic backsliding? Second, how can democracies adapt to these emerging challenges?

Democratic backsliding refers to the gradual erosion of democratic norms, institutions, and principles within a democratic system. These include the weakening of checks and balances, the erosion of the rule of law, and the concentration of power in the hands of a few, leading to the deterioration of democratic governance.

Although the concept of democratic backsliding provides a solid basis for understanding the subtle, gradual changes that can undermine democratic institutions, it also makes it easier to identify and analyses them. It highlights the importance of democratic institutions and draws attention to how their weakening can be detrimental to democracy. However, this concept often lacks specificity regarding the fundamental causes, making it difficult to comprehensively address the core issues. While it identifies the symptoms of democratic decline, it cannot always account for the causes of these symptoms – the underlying social, economic, or cultural factors.

The decline of democracy refers to a broader process in which a democratic system loses its vitality, credibility, and functionality. This can happen due to various factors, including political polarization, economic instability, social unrest, or external pressure. The concept of democratic decline encompasses several factors that allow for a more comprehensive and holistic analysis of the challenges facing democratic societies. It recognizes that democratic decline may play out differently in different contexts, depending on cultural, historical, and regional specificities. Unlike backsliding, which often has identifiable indicators, measuring the decline of democracy can be challenging due to its complex, multifaceted nature.

Democracy and human rights fail to play a vital role in shaping contemporary societies, often based on the idea that these principles have become largely formal or superficial – enshrined in laws and rhetoric, but ineffective in terms of genuine civic participation, the rule of law, inclusion, or social justice. This disconnect contributes to declining trust, eroding resilience in communities, and a failure to foster truly inclusive and respectful societies.

Underlying both democratic backsliding and the broader decline of democracy is the deterioration of a more fundamental resource: democratic values, and the interpersonal and institutional trust through which those values are sustained in everyday social and political life. Democratic values are not merely procedural requirements. These are the normative foundations on which the effectiveness and sustainability of democratic institutions depend. When these values are eroded, institutions lose not only their social legitimacy but also their ability to function, as compliance with established norms, cooperation, and civic engagement decline. The erosion of interpersonal and institutional trust is therefore not simply a symptom of democratic illness. It is one of its primary drivers, and any serious account of democratic backsliding or decline must reckon with the values and social relations that make democratic governance possible in the first place.

2. PERFORMANCE, LEGITIMACY, AND DEMOCRATIC RENEWAL: DIAMOND'S THESIS

Journal of Democracy co-founder Larry Diamond has asked the defining question of our era: "How can we restore support for democracy in the world?" His answer frames the normative architecture of this article:

"Democracies today remain in a potent and protracted recession, and they have retreated from the ideological struggle against autocracy. We can renew the world's democratic momentum through power, performance, and legitimacy." (Diamond, 2024, p. 5)

Diamond's framework rests on two interrelated claims. First, there is still a broad aspiration for democracy around the world. This belief in democracy remains widespread enough to support the claim that it is a universal value, in the sense that people from diverse cultural traditions regard it as important to their lives. Regional data bear this out with nuance: in Asia, support for democracy remains strong in Japan, South Korea, and Taiwan, and at least nominally in Thailand and Indonesia. In Latin America, support has declined to 48 per cent from 65 per cent in 2010. Two-thirds of Africans across 36 countries continue to believe that democracy is preferable to any other form of government (Inglehart et al., 2022).

Second, Diamond draws on Seymour Martin Lipset's insight that belief in the legitimacy of democracy may be shaped by culture and history, but is also driven by economic development and the performance of present versus past regimes (Diamond, 2024). The implication is direct: a major reason why democracy has been eroding in this century is its poor economic and political performance. This "performance-

legitimacy nexus" – the idea that democratic legitimacy is partly earned through effective governance – constitutes the analytic core of this article.

Diamond's prescription is correspondingly demanding: democracy must prove itself. It must demonstrate that it, with freedom and rule-based governance set against autocracy's repression and arbitrariness, is a morally and practically superior form of government – indeed the only form that has assured or can assure human dignity, peace, and prosperity. This is not a counsel of complacency but a call to rigorous democratic self-improvement.

3. A THREAT TO DEMOCRACY: FROM OUTSIDE OR WITHIN?

The question of whether democratic threats are primarily external or internal has acquired fresh urgency. J.D. Vance, in his high-profile February 2025 speech at the Munich Security Conference – focusing on Europe but with implications for broader Western democratic systems – argued that the greatest threat to democracy comes not from external forces like Russia or China, but "from within": a retreat from fundamental values such as free speech and genuine popular sovereignty.

Vance gave several examples of how various European Union governments and institutions suppress dissenting voices, that is, censor social media, persecute citizens for their online comments, put people on trial for religious activities (for example, for silent prayer outside medical clinics) and even annul election results (as in the case of the presidential election in Romania) under the pretext of disinformation or foreign interference. He accused EU leaders of being afraid of their own voters, using "democracy" as a label to justify censorship and the suppression of populist or dissenting voices, while ignoring public concerns about issues such as migration.

In Vance's view, true democracy requires listening to the voices of citizens without any "barriers" or suppression; failing to do so undermines its legitimacy. He argued that democratic values lose their meaning when leaders prioritize elite control over the will of the people, making society vulnerable rather than resilient. This aligns with the argument that formal commitments to human rights – freedom of expression, freedom of conscience – are not upheld in practice, which undermines inclusion and respect.

Vance's arguments are consistent with broader academic discussions. His "internal threat" hypothesis is supported by research on democratic backsliding – the observation that contemporary autocratization typically occurs due to the actions of elected officials in power, rather than through military coups or foreign invasions (see: Levitsky & Ziblatt, 2018; Lührmann & Lindberg, 2019). However, Vance's view itself is controversial. His critics argue that he confuses the legitimate regulation of disinformation with censorship and underestimates the real pressure that authoritarian states exert on democratic systems. The empirical evidence reviewed in the following sections allows us to evaluate these conflicting claims based on survey data of citizens' attitudes.

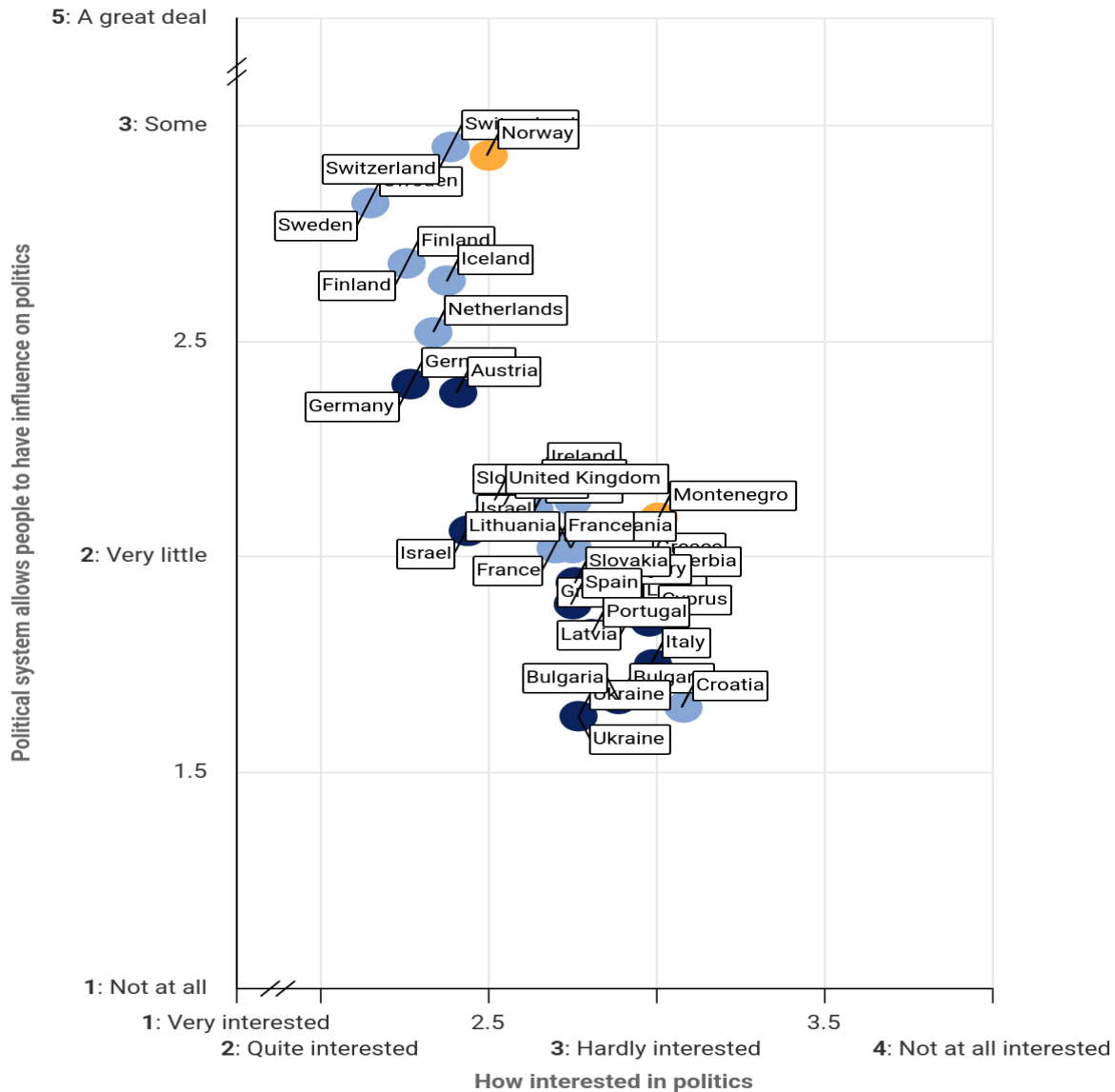
4. EVIDENCE FROM THE EUROPEAN SOCIAL SURVEY

The European Social Survey (ESS), a high-quality cross-national study tracking attitudes since 2002, provides empirical backing for perceptions of decline in key democratic elements. While overall support for democracy as an ideal remains high – with mean scores above 8 out of 10 for living in a democratically governed country, and strong endorsement of core liberal elements as free and fair elections and equal treatment by courts – evaluations of how democracy functions in practice reveal significant gaps.

4.1 The openness of the political system and satisfaction with democracy

A very important indicator is the openness of the political system. Genuine democratic openness in a political system means not only allowing citizens to influence government decisions, but also ensuring competition—the ability to challenge the rules, organize opposition, and actually replace those in power. The openness of the political system functions as a mechanism that is not controlled by any single actor.

Political system allows people to have influence on politics vs How interested in politics



ESS round 11 - 2023. Social inequalities in health, Gender in contemporary Europe | N = 50020
ess.sikt.no

Source: European Social Survey European Research Infrastructure (ESS ERIC) (2026) ESS11 - integrated file, edition 4.1 [Data set]. Sikt - Norwegian Agency for Shared Services in Education and Research.
https://doi.org/10.21338/ess11e04_1.

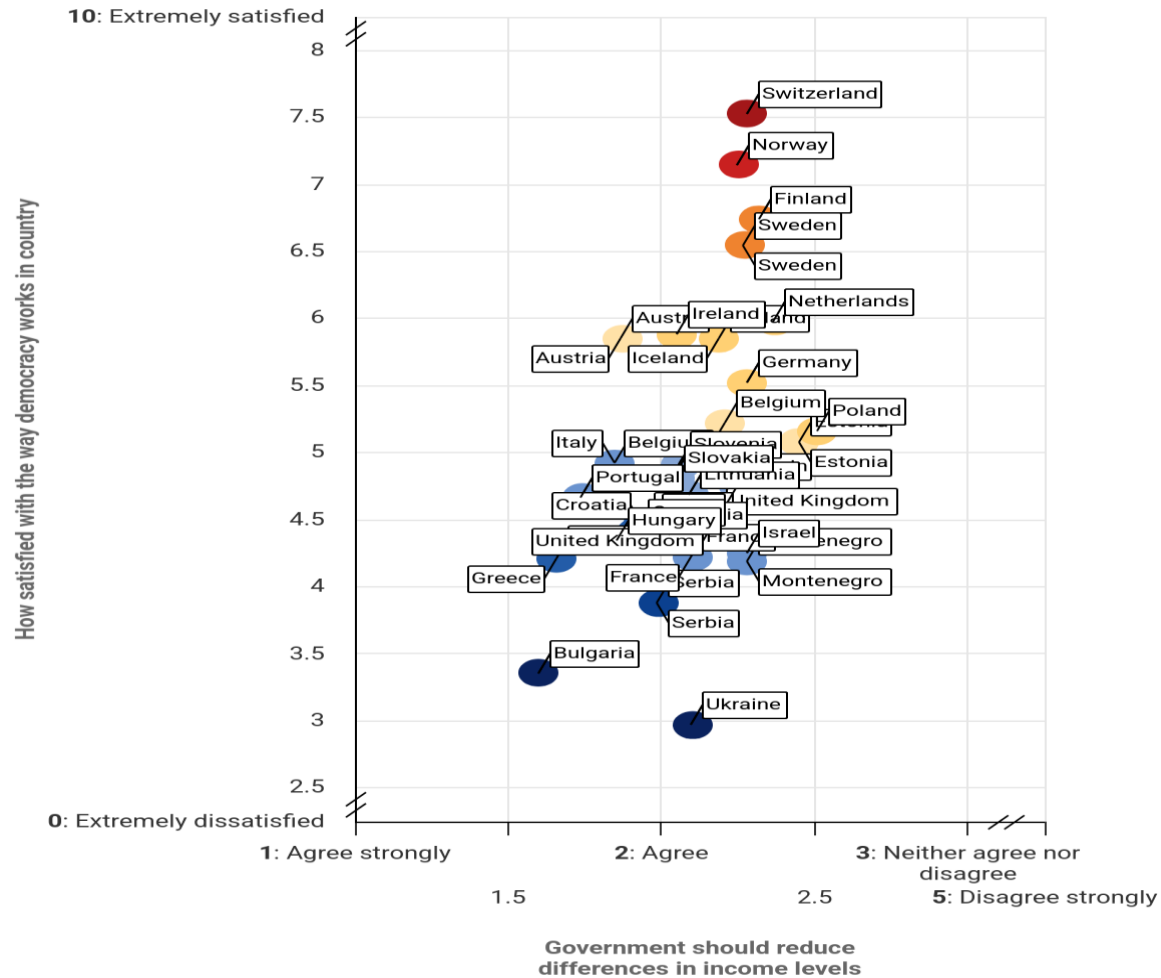
In high-openness systems (e.g., Norway, Sweden), citizens both care about politics and feel efficacious, which sustains democratic legitimacy, electoral participation, and policy compliance. These systems benefit from a virtuous cycle: perceived influence – engagement – responsiveness – reinforced legitimacy. Democracy here is not just procedural but deeply embedded and resilient.

In contrast, in lower-openness contexts (e.g., Bulgaria, Ukraine), democracy risks becoming formally intact but substantively hollow. When citizens are less interested and feel they have little influence, participation declines, accountability weakens, and elites face fewer constraints – creating space for populism or democratic backsliding. Intermediate cases (e.g., Italy, Spain) demonstrate cyclical instability. Here civic engagement exists, but it is not paired with a perceived sense of efficacy, which leads not to the stable consolidation of democracy but to periodic outbreaks of protest or voting against the system.

On the other hand, in many countries, the public continues to support the government playing an active role in reducing income inequality, providing healthcare services, ensuring education, and providing unemployment benefits and old-age pensions.

When it comes to broader issues – such as government efforts to reduce income inequality, protection against poverty, or opportunities for citizens to participate directly in decision-making (e.g., through referendums) – even greater discrepancies are evident: while the importance of these aspects is rated lower, the quality of their implementation is rated extremely low.

How satisfied with the way democracy works in country vs Government should reduce differences in income levels



ESS round 11 - 2023. Social inequalities in health, Gender in contemporary Europe | N = 49191 ess.sikt.no

Source: European Social Survey European Research Infrastructure (ESS ERIC) (2026) ESS11 - integrated file, edition 4.1 [Data set]. Sikt - Norwegian Agency for Shared Services in Education and Research. https://doi.org/10.21338/ess11e04_1.

In this context, it is also worth mentioning the variable of satisfaction with democracy. It primarily reflects the legitimacy of the political system and enhances political stability. Satisfied citizens are less likely to support radical or anti-democratic movements, whereas dissatisfaction fuels populism, protests, and political instability.

Here are a few more important aspects of trust in democracy. First, compliance and cooperation: when people feel that democracy serves them, they are more likely to obey the law, pay taxes, and cooperate with institutions. Next is political participation, as satisfaction encourages voting, civic engagement, and

interest in politics, while dissatisfaction leads to apathy, disengagement, or even the mobilization of anger.

Ultimately, satisfaction is a long-term prerequisite for the survival of democracy. Democracies that continually lose public satisfaction tend to weaken or even collapse over time. Public support is the primary safeguard of democratic systems.

Here, we may go back to the connection between satisfaction with democracy and the role of government.

Northern and Northwestern countries (e.g., Switzerland, Norway, Finland) cluster at the top, combining high satisfaction with democracy and only moderate demand for stronger redistribution. Western Europe occupies a middle position, where satisfaction remains relatively high but support for redistribution is somewhat stronger. In contrast, Southern and especially Central and Eastern European countries (e.g., Greece, Bulgaria, Ukraine) show lower satisfaction with democracy alongside stronger support for reducing income inequalities, indicating a perception that current democratic systems are not delivering equitable outcomes.

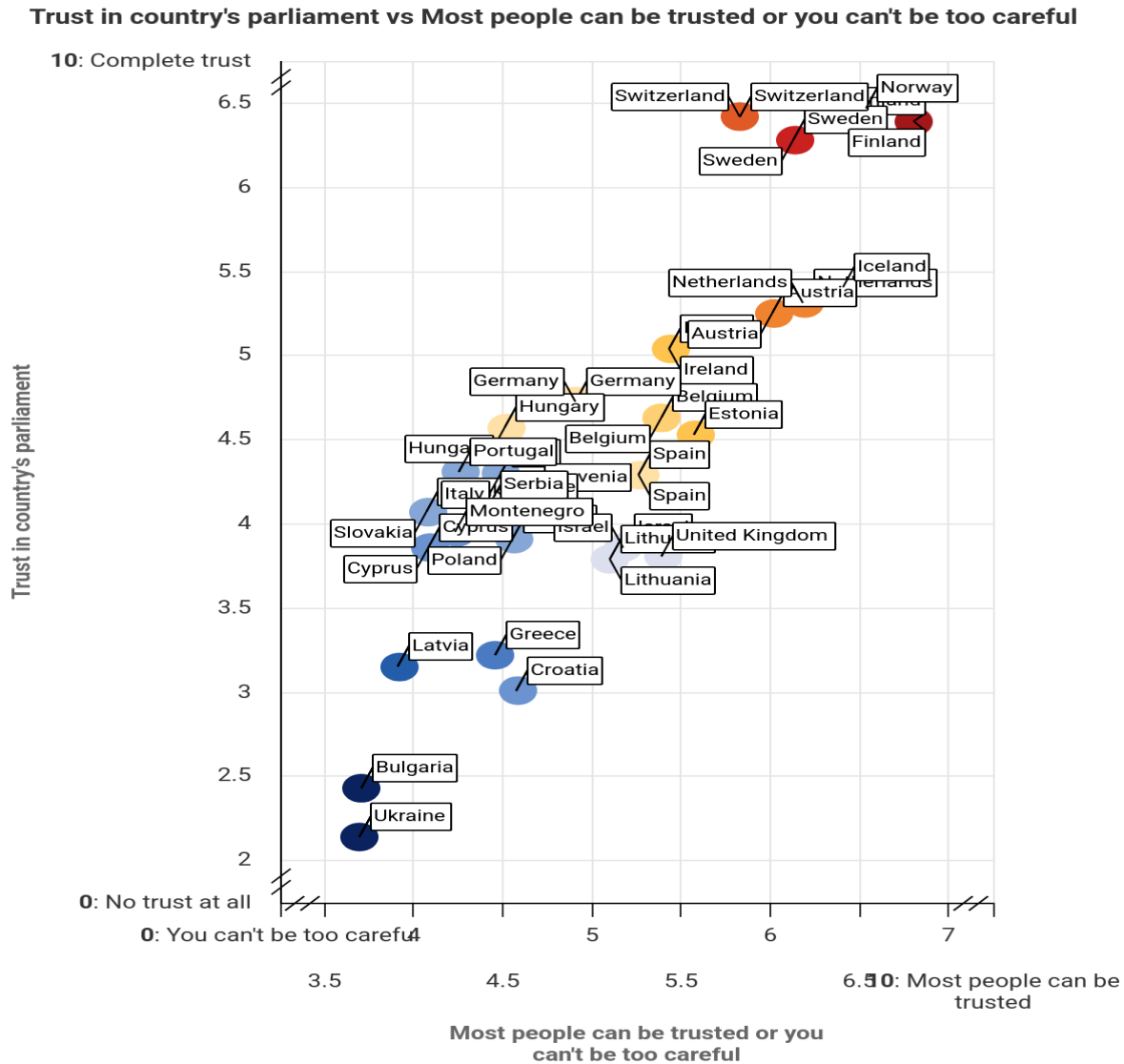
With regard to democracy, the ESS data show that satisfaction with democracy is closely linked to perceived economic justice. In regions where satisfaction levels are high, preferences regarding redistribution are more moderate, as it is believed that institutions already ensure an acceptable level of fairness, which strengthens the stability of the regime. In regions where satisfaction levels are lower, a strong demand for redistribution reflects dissatisfaction with outcomes – citizens judge democracy by its social and economic achievements. When these expectations are not met, it can undermine trust in democratic institutions, fuel support for populist or anti-establishment forces, and increase pressure to adopt more interventionist or redistributive policy measures. This pattern is consistent across different ESS rounds and countries, suggesting a structural rather than conjunctural deficit.

4.2 Trust in institutions and social trust

Trust in institutions is eroding due to crises – economic, pandemic, and cost-of-living – which are fueling polarization and populism. Current studies based on ESS data show that trust in national governments and parliaments is declining in many countries, and this trend is linked to generational differences, as younger Europeans are becoming increasingly skeptical compared to older generations. Social or interpersonal trust is also important in this context, as lower levels of trust correlate with lower civic engagement and a weakened sense of collective efficacy.

Furthermore, ESS data show a positive correlation between interpersonal trust and trust in parliament, but, more importantly, they reveal distinct regional clusters. Nordic countries (e.g., Norway, Sweden, Finland) form a high-trust group on both dimensions, while Western Europe occupies a slightly lower but

still strong position. Southern Europe sits in the middle with weaker institutional trust, and Central and Eastern European countries (e.g., Bulgaria, Ukraine) cluster at the lower end, indicating weaker trust overall.



ESS round 11 - 2023. Social inequalities in health, Gender in contemporary Europe | N = 49977
ess.sikt.no

Source: European Social Survey European Research Infrastructure (ESS ERIC) (2026) ESS11 - integrated file, edition 4.1 [Data set]. Sikt - Norwegian Agency for Shared Services in Education and Research.
https://doi.org/10.21338/ess11e04_1.

From the perspective of path-dependence theory, the groupings of countries listed above reflect long-term historical trends rather than short-term political conditions. Northern European countries established effective and inclusive state institutions early on, which fostered self-reinforcing cycles of

trust. Western Europe followed a similar but more varied path, while in Southern Europe, later democratization and the legacy of clientelism limited trust in institutions. Meanwhile, the new democracies of Eastern and Central Europe are characterized by low trust in institutions, which continues to result in lower levels of trust today.

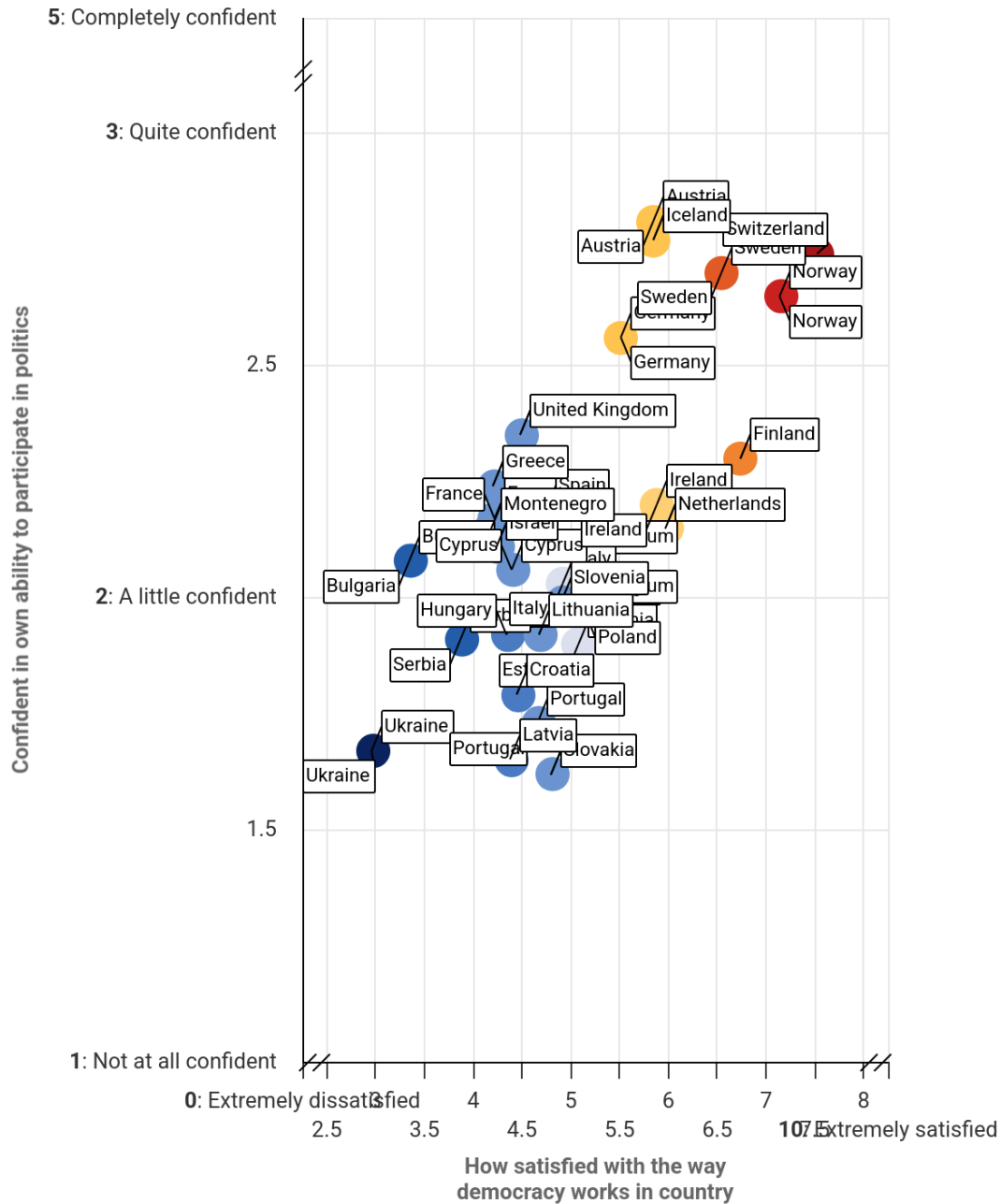
Overall, this figure illustrates stable balances of trust: high-trust systems (the Nordic countries, some Western European countries) and low-trust systems (most countries in Central and Eastern Europe and the Balkans). These balances are maintained through feedback loops between citizens and institutions, making rapid convergence between different groups of countries unlikely. Thus, trust is a deeply rooted result of historical institutional development, rather than a variable that can be easily altered by recent reforms.

In regions where trust is high, such as the Nordic countries (Norway, Sweden), democracy is generally stable, responsive to citizens' needs, and effective in ensuring compliance with rules: citizens accept the outcomes, institutions enjoy legitimacy, and policymaking can proceed with lower transaction costs. This fosters consensus-based politics, effective social welfare provision, and greater resilience to populist upheavals. In Western Europe, slightly lower trust still sustains democratic performance, though with more visible contestation and periodic volatility. In lower-trust regions, particularly parts of Central and Eastern Europe (e.g., Bulgaria, Ukraine), democracy is more fragile and contested. Weak institutional trust reduces compliance, increases polarization, and creates fertile ground for populism or executive aggrandizement. Again, Southern Europe occupies an intermediate position, where democratic institutions persist but face recurrent legitimacy challenges, especially during crises, leading to cyclical instability rather than systemic breakdown.

4.3 Civic participation and inclusion

While direct long-term declines in participation are not uniform across countries, low satisfaction correlates with political apathy, lower voter turnout in some contexts, and disillusionment with representative institutions. Evaluations are particularly critical for social justice aspects (reducing inequalities) and direct or populist elements (the peoples' will prevailing), suggesting that formal democracy fails to deliver inclusion or justice, generating communities that are less resilient and less capable of collective governance.

Confident in own ability to participate in politics vs How satisfied with the way democracy works in country



ESS round 11 - 2023. Social inequalities in health, Gender in contemporary Europe | N = 49347

ess.sikt.no

Source: European Social Survey European Research Infrastructure (ESS ERIC) (2026) ESS11 - integrated file, edition 4.1 [Data set]. Sikt - Norwegian Agency for Shared Services in Education and Research.

https://doi.org/10.21338/ess11e04_1.

This is most evident in the Nordic and Alpine clusters (Norway, Switzerland, Iceland), where high satisfaction correlates with the highest levels of internal efficacy. Essentially, in these high-trust environments, political participation feels rewarding rather than futile. On the contrary, many Eastern and Southern European nations (such as Bulgaria, Ukraine, and Portugal) appear caught in an "apathy trap." When satisfaction with the democratic process is low, citizens are less likely to develop the skills or confidence to engage with it, suggesting that political "ability" is often a byproduct of a functional system rather than just an innate trait. Regionally, the data reveals a stark East-West divide reflecting institutional stability and historical context. The new democracies dominate the bottom-left quadrant, signaling a "transition lag" where citizens still feel alienated from the political process.

5. EVIDENCE FROM THE WORLD VALUES SURVEY

The World Values Survey (WVS), which has been conducted since 1981 and comprises seven completed waves (from 1981 to 2022), is the most comprehensive global survey of core values, covering more than 100 countries and territories across all waves, representing the majority of the world's population. It tracks long-term changes in values, beliefs, and attitudes toward democracy, government, trust, and participation using recurring questions.

WVS data, including the 1981–2022 trend file, reveal tendencies that coincide with – and often further reinforce – the concerns expressed by the ESS data regarding declining civic engagement, the effectiveness of the rule of law, inclusion, social justice, and the “hollowing out” of democratic and human rights commitments as they become more formal than substantive.

5.1 Social trust vs. political trust

Studies on social and political trust are particularly important because they reflect two distinct yet interrelated aspects of trust in society. Social trust (trust in other people in general) reflects the level of interpersonal cooperation and social cohesion in society, while political trust refers to citizens' trust in political institutions, politicians, and the political system itself. Distinguishing between these two types of trust is very important because high social trust does not in itself imply high political trust. Furthermore, these two types of trust have different causes and consequences for governance stability, its quality, and social well-being.

The World Values Survey (WVS) allows us to analyze trends in social and political trust and differences between countries more effectively than any other dataset.

The Nordic European countries are the global outliers in a remarkably stable way. In Norway and Sweden, more than 60 per cent of WVS respondents thought that most people can be trusted – a figure that has barely shifted across three decades (Inglehart et al., 2022). The mechanisms behind this are well

understood: low trust levels increase transaction costs and discourage people from investing in public goods, suggesting that trust does indeed drive economic growth.

Latin America finds itself on the opposite end of the spectrum. In Colombia, Brazil, and Peru, fewer than 10 per cent of the population believes that most people can be trusted, and since the early 1990s, this situation has worsened rather than improved. There is a strong negative correlation between inequality and trust—people are more likely to trust those who are similar to themselves, and greater inequality leads to conflicts over the distribution of resources (Inglehart et al., 2022).

Eastern Europe is showing a particularly noteworthy trend. Following the democratic changes of 1989–1991, political trust briefly increased – citizens had high expectations for the new democratic institutions. Ironically, a decline in political trust accompanied the expansion of democracy as those expectations collided with reality.

South Asia is the region with the most diverse domestic situations. India, Bangladesh, and Pakistan consistently record high levels of trust in the government (often reaching 50–60 per cent), driven by strong authoritarian institutions, and, in India’s case, pride in its democratic identity, although this trust does not necessarily correspond to satisfaction with the quality of governance (Inglehart et al., 2022).

The data on interest in politics is infused by a fundamental paradox, which is captured by political scientist Pippa Norris’s concept of “critical citizens”: interest in politics has increased precisely in those regions where trust in institutions has declined the most. Southern Europe is the clearest example, following the 2008–2010 financial crisis, lots of previously inactive people became politicized, increasing interest, while satisfaction plummeted. Trust in politics is directly linked to political engagement and perceived effectiveness, which suggests that trust depends on the government’s performance; however, the causal relationship can also be reversed: unsuccessful government performance generates engagement driven by outrage.

Eastern Europe is like a mirror image: interest in politics was particularly high during the transition period (after decades of communist rule, politics became extremely important), but a decline is evident in 2020 as democratic fatigue and normalization take hold. Although the commitment to democracy remains relatively unchanged in the 21st century, trust in democratic institutions, especially established political parties and other representative bodies, was already weak at the beginning of the century, which created fertile ground for mistrust and populism to grow.

In general, political trust and efficacy (belief that ordinary people can influence politics) show erosion, especially in Western and some transitional societies. Interpersonal and social trust has also declined in places like the United States (approximately halving since the 1970s in related data). Recent studies link lower trust and happiness to rising populism and polarization. This supports the argument that the formal

rule of law and participation mechanisms feel unresponsive – governments seen as captured by elites, big business, or corruption – thereby undermining community respect and inclusion.

5.2 Support for democracy: ideal versus practice

Abstract support for democracy remains high and relatively stable globally. In the 2017 – 2022 World Values Survey Wave, as many as 84 per cent of respondents across different countries supported the statement that it is good to have a democratic political system (Inglehart et al., 2022). Furthermore, in most waves of the World Values Survey, the majority of respondents rate democracy as a “good” or “very good” form of government, and democratic systems are preferred over other alternatives, such as strong leadership, military rule, or technocracy. However, satisfaction with the way democracy is actually implemented is clearly declining. In total, as many as 55 per cent of respondents were satisfied with how democracy is working in their countries (Inglehart et al., 2022).

From the mid-1990s – when satisfaction was higher, around the post-Cold War peak – to recent years, dissatisfaction has risen significantly, reaching all-time highs in many analyses by the late 2010s and early 2020s. Global dissatisfaction increased by approximately ten percentage points – from around 48 per cent to 57–58 per cent in population-weighted samples of democracies – with sharper rises following 2005 amid economic crises, populism, and events like the 2008 financial crisis. In developed democracies (Europe, North America), satisfaction fell from a majority of approximately two-thirds in the 1990s to minorities today (Inglehart et al., 2022). Large populous democracies (the United States, Brazil, Mexico, and the United Kingdom) show some of the sharpest drops, with US dissatisfaction rising by more than a third in one generation. This mirrors the ESS “democratic deficit.”

5.3 Government responsibilities, welfare, and social justice

Items on government versus individual responsibility for welfare, reducing inequalities, and provision of health and education show persistent or high expectations for state roles in many societies, often stable across waves. In Wave 7 (2017–2022), the public in diverse contexts still favors government intervention for social protection. However, gaps between desired responsibilities and perceived performance widen – similar to ESS – fueling views that commitments to social justice and inclusion are formal rhetoric rather than effective outcomes. Economic insecurity and crises increase disillusionment with delivery. Still, this is not a linear trend.

In some countries, confidence in government remained almost the same, looking at the early 1990s and 2020s. For instance, in Norway, Spain remained stable, but in many other countries, such as Lithuania, Slovenia, Czechia and Poland, it decreased substantially (Inglehart et al., 2022).

5.4 Confidence in institutions, participation and broader democratic elements

Confidence in core institutions – government, parliament, civil service, and the justice system – has trended downward in many countries over waves, particularly from the 1990s and 2000s onward. Countries like Croatia, Slovenia, Albania, Poland, and the Czech Republic showed very low confidence in all three major institutions (parliament, government, and political parties), which could indicate widespread dissatisfaction with the political system and a potential crisis.

A key structural pattern visible in the WVS data is the "asymmetry of institutional trust": confidence in non-partisan institutions like the armed forces and the courts consistently outperforms confidence in elected bodies, especially in Eastern and Southern Europe. Political parties are the single most distrusted institution in virtually every region measured.

Furthermore, the WVS distinguishes between conventional and unconventional participation. Petition-signing, historically the most accessible action, shows dramatic regional stratification. Nordic countries report rates near 70 per cent, while South Asia sits closer to 18 per cent (Inglehart et al., 2022). It is interesting to note that non-traditional forms of participation, such as demonstrations and boycotts, are becoming increasingly widespread, particularly in Southern Europe and Latin America. Although direct participation (such as the legitimacy of protests and political engagement) is different, overall trends point to growing disillusionment. Support for the values of emancipation – self-expression, tolerance, and gender equality – has grown in the long term, reinforcing the normative appeal of democracy. However, this coexists with declining trust and lower perceived performance and, in some cases, growing support for “strong leaders” who can bypass parliaments and competitive elections.

5.5 Comparison of WVS and ESS

The two survey programmes converge on a coherent picture. Both WVS and ESS show stable or high abstract support for welfare and social justice roles and for democratic ideals, but declining trust, efficacy, responsiveness, and satisfaction with practice. Gaps between ideals and reality persist and widen, contributing to perceptions of hollowed-out institutions that fail to foster resilient, inclusive communities.

The WVS time series reveals a global decoupling: formal institutional trust and confidence have declined or stagnated in most regions since the 1990s.

Important differences and nuances remain. The WVS's longer span of four decades and near-global coverage highlight broader and more persistent declines in trust and satisfaction. The WVS emphasizes value shifts – toward emancipative values – as potential democratic foundations; yet practical erosion dominates recent waves. Crucially, declines are not uniform: they are stronger in developed and Western contexts and in populous democracies, while some "islands of contentment" – notably the Nordic countries – maintain high satisfaction, pointing to the importance of strong welfare delivery, direct participation mechanisms, and high social trust as buffers against democratic decline.

CONCLUSIONS

The main argument of this article can be summarized as follows. The gap between democratic aspirations and satisfaction with democracy is real, persistent, and growing – this is a structural, not a cyclical, crisis of legitimacy. Furthermore, contemporary democracies are suffering from a deep crisis in which the erosion of institutional trust and the deterioration of governmental performance interact in mutually reinforcing ways.

The two main international surveys discussed in this article – the ESS and the WVS – present a fairly consistent empirical picture: while abstract support for democratic values and principles remains strong in most countries around the world, satisfaction with how democracy functions in practice is declining quite sharply and steadily, leading to a growing gap between citizens' expectations and government performance in the areas of equality, inclusivity, the rule of law, and responsiveness to citizens' needs.

The erosion of trust is the primary cause of democracy's vulnerability, not merely a side effect. Data from both the ESS and the WVS show that trust in institutions – parliaments, governments, and political parties – has been dropping in most regions since the 1990s, and that this decline is structurally embedded rather than easily reversible. Most importantly, trust is not a simple reactive variable: path-dependence theory suggests that it reflects decades of institutional development, making a rapid recovery unlikely. An environment of low trust – characteristic of Central and Eastern Europe, parts of Southern Europe, and Latin America – reduces adherence to democratic norms, weakens accountability mechanisms, and creates conditions conducive to the expansion of executive power and populist mobilization. Thus, the erosion of trust is not a consequence of the malfunctioning of democracy, but rather one of its primary causes.

Declining civic engagement and weakening political efficacy increase the democratic deficit. ESS data show that where satisfaction with democracy is low, citizens are less likely to develop the confidence or motivation to participate in politics, and they fall into the "trap of apathy." Low satisfaction correlates with lower voter turnout, political disillusionment, and disengagement from representative institutions. This is particularly evident in the new democracies of Eastern and Central Europe, where citizens feel especially disconnected from the political process. However, WVS data reveal a fundamental paradox here: in some regions – particularly in Southern Europe following the 2008 financial crisis – declining trust has paradoxically increased politicization, sparking activism driven not by efficacy but by anger. Ultimately, neither apathy nor protest-driven activism, taken in isolation, restores the health of democracy. It can be restored only if activism is linked to institutional responsiveness.

The ailing democracy is neither inevitable nor irreversible. The persistence of democratic aspiration across societies and continents demonstrates the durable normative power of democratic governance. The "islands of resilience", as in Nordic Europe, visible in cross-national data, demonstrate that high-

performing, high-trust democracies are achievable. However, data from the ESS and WVS also clearly show that the renewal or recovery of democracy cannot be achieved solely by changing procedures. It requires a fundamental improvement in citizens' living conditions – guaranteeing economic security, social protection, equality before the law, and meaningful political participation.

Moreover, democratic backsliding is neither externally imposed nor structurally inevitable, but it is endogenous and self-reinforcing. Consistent with Levitsky and Ziblatt's arguments, we can conclude that contemporary autocratisation proceeds primarily through the actions of elected officials exploiting weakened institutional trust and disengaged citizenries – not through military coups or foreign invasions. The J.D. Vance thesis regarding internal democratic threats also finds partial empirical support.

The overall conclusion is that the renewal of democracy requires simultaneous, mutually reinforcing changes in three areas: performance, legitimacy, and participation. As Larry Diamond (2024) insists, if we want to restore global democratic momentum, we must prove that democracy – with freedom and rule-based governance set against autocracy's repression and arbitrariness – is a morally and practically superior form of government, and indeed the only form of government that has assured or can assure human dignity, peace, and prosperity.

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RUPTURES IN TRANSATLANTIC RELATIONS AND THEIR EFFECTS ON SOUTHEAST EUROPE: THE CASES OF KOSOVA AND ALBANIA

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Abstract

Today, more than at any other time in recent years, transatlantic relations appear to be under growing strain. Disagreements over NATO's role, tensions surrounding Greenland, diverging positions on the war between Russia and Ukraine, and most recently public disagreements over the American intervention in Iran and the security of the Strait of Hormuz have all raised new questions about the cohesion and strategic future of the transatlantic alliance. These developments may have significant implications for European security, for the future role of NATO, and for smaller states whose foreign and security policies have long relied on the stability of the transatlantic framework.

This paper examines how a possible rupture, or deepening fragmentation, within transatlantic relations may affect the foreign and security policy orientations of Kosova and Albania. It asks how these two states might position themselves in a context in which the interests and strategic priorities of their principal allies become increasingly divergent. For both countries, the path toward the European Union remains politically important, while their security outlook continues to be closely linked to NATO and, in particular, to the United States. This creates a potentially delicate strategic dilemma in periods of transatlantic disagreement.

Methodologically, the paper adopts a qualitative comparative approach, combining historical analysis with the review of relevant academic literature, official policy documents, and public statements by political leaders and institutional representatives from Kosova, Albania, the European Union, NATO, and the United States. By comparing the strategic choices, constraints, and discursive positions of Kosova and Albania, the paper aims to identify both common patterns and country-specific differences in their responses to shifting transatlantic dynamics.

The paper concludes with policy recommendations on how Kosova and Albania may navigate this delicate environment while preserving their Euro-Atlantic orientation and safeguarding their long-term security and foreign policy interests.

Keywords: Transatlantic relations, rupture, foreign policy, security policy, smaller states.

INTRODUCTION

Transatlantic relations have entered one of their most uncertain phases since the end of the Cold War. Disagreements that were once largely tactical - concerning burden-sharing, diplomatic consultation, or operational priorities - increasingly touch the strategic purpose of the alliance itself. NATO remains the central institutional expression of Western collective defense, but its cohesion is being tested by the return of great-power rivalry, Russia's war against Ukraine, the rise of China as the principal long-term challenger for the United States, and a more transactional tone in U.S. foreign policy. The result is not necessarily the collapse of the alliance, but a fragmentation of expectations about what the alliance is for, who should carry its costs, and how far allied interests still overlap.

For small states in Southeast Europe, this uncertainty has immediate consequences. Kosova and Albania have built their post-Cold War foreign-policy identities around a Euro-Atlantic orientation. The European Union remains the main framework for political, economic, and institutional integration, while NATO - and, in practice, the United States - remains the essential security partner. This dual dependence creates a strategic dilemma whenever Washington and key European capitals appear to diverge. The dilemma is particularly sensitive for Kosova, whose statehood, security, and international consolidation remain incomplete, but it also matters for Albania, whose NATO membership provides security without fully insulating it from broader divisions within the West.

The paper uses a qualitative comparative approach, combining historical analysis, academic literature, official documents, and public statements. Its central research question is: how might Kosova and Albania position themselves if the United States and key European allies diverge more sharply on security, burden-sharing, and regional priorities? The paper does not assume that a permanent rupture is inevitable. Instead, it treats transatlantic fragmentation as a spectrum ranging from managed divergence, through more transactional Atlanticism, to the more severe possibility of strategic decoupling. This distinction is important because the policy choices available to small states depend not only on whether the alliance survives, but also on how predictable, credible, and politically cohesive it remains.

1. FROM ATLANTIC COHESION TO STRATEGIC FRICTION

NATO was created in 1949 as both a military and a political response to Soviet expansion. It also anchored U.S. leadership in Western Europe at a moment when the continent was being rebuilt after the Second World War. The Alliance was therefore never merely a defense pact. It helped stabilize Western Europe, integrate West Germany into Euro-Atlantic structures, manage the historical Franco-German rivalry, and support the wider environment in which European economic and political integration could advance. In this sense, NATO secured Europe externally while also organizing the political hierarchy of the Western bloc during the bipolar order (Hanhimäki et al., 2012; Murphy, 2014).

Yet transatlantic tension was present from the beginning. Americans and Europeans often disagreed about financing, capabilities, and the degree to which Europe should be able to act independently. The failure of early European defense projects, the Suez Crisis of 1956, the Arab-Israeli War of 1973 and the oil crisis that followed, France's withdrawal from NATO's integrated military command in 1966, the Cyprus crisis of 1974, and differing European approaches to relations with the Soviet Union all showed that the Alliance contained both cohesion and asymmetry. (Gaub & Heist, 2026; Murphy, 2014; Hanhimäki et al., 2012).

During the Cold War, Western European security was widely understood to be impossible without the United States and NATO. After the Cold War, however, many analysts and political leaders questioned whether NATO still had a strategic rationale. The wars in the former Yugoslavia answered this question in practice. They exposed the limits of European strategic capacity and demonstrated that political will without credible military capability was insufficient. The European Union aspired to become a geopolitical stabilizer, but the Balkans showed that U.S. leadership and NATO assets remained indispensable for ending war and preserving stability on the European continent (Ischinger, 2026; Murphy, 2014 Koops, 2010).

The Kosovo war and the subsequent development of the European Security and Defence Policy (ESDP), later the Common Security and Defence Policy (CSDP), became turning points. Washington supported stronger European capabilities, but wanted them to remain compatible with NATO and not evolve into a competing structure. Madeleine Albright's warning about the three Ds - no diminution of NATO, no discrimination against non-EU NATO allies, and no unnecessary duplication - captured this American concern during the early development of European defense cooperation (Albright, 1998). The lesson was not that Europe should avoid capability-building, but that European defense should strengthen the Alliance rather than weaken its cohesion.

Despite these recurring disagreements, NATO has remained the most successful military-political alliance of the modern era. It grew from 12 founding members in 1949 to 32 members by 2026, and its continuing enlargement demonstrates the enduring attraction of the Atlantic security guarantee. Hanhimäki et al. (2012) describe the post-1945 transatlantic order as a kind of Pax Transatlantica: a system that brought peace, security, and economic development to Europe and North America. The present crisis should therefore be understood against this longer history: NATO has always contained disagreement, but the current challenge is whether those disagreements are becoming structurally harder to manage.

2. STRATEGIC AUTONOMY, RUSSIA, AND THE RETURN OF HARD SECURITY

European strategic autonomy is not a new ambition. From de Gaulle to Macron, the idea has reappeared whenever European leaders perceived U.S. leadership as uncertain or insufficiently aligned with European interests. In practice, however, European autonomy has often developed more as political vocabulary and

institutional aspiration than as a full substitute for NATO in matters of hard security. The recurring pattern is one of ambition without complete operational independence (Damen, 2022; Macron, 2024; Maurice, 2026).

The concept itself remains contested. MacKenzie (n.d.) notes that Europeans are not fully united on what strategic autonomy means or how it should be shaped vis-à-vis the United States, China, and Russia. The European Parliamentary Research Service similarly shows that strategic autonomy has moved from defense to a wider agenda that includes supply chains, energy, digital capacity, democratic resilience, and values (Damen, 2022). This widening of the concept makes it more relevant, but also more difficult to operationalize. A Europe that seeks autonomy in energy, technology, and defense must still decide whether autonomy means independence from the United States, a stronger European pillar inside NATO, or simply greater capacity to act when U.S. support is uncertain.

At the center of this debate lies the Franco-German relationship. France and Germany remain the core political engine of the EU and, by extension, of European strategic autonomy. Yet this partnership is also marked by different strategic cultures, different industrial priorities, and increasingly transactional bargaining. Recent tensions over the war in Ukraine, NATO spending, the relationship with Washington, and difficulties in joint defense projects have strained the Franco-German tandem. Maurice (2026) argues that Franco-German cooperation must become more pragmatic and operational if it is to strengthen European sovereignty. This is not a minor point: without a functioning Franco-German core, European strategic autonomy risks remaining a slogan rather than a strategy.

The changing treatment of Russia illustrates the problem clearly. NATO's 2010 Strategic Concept emphasized cooperative security and the possibility of partnership with Russia, reflecting the post-Cold War assumption that Russia could be integrated into a broader Euro-Atlantic security order (NATO, 2010). That assumption was weakened by the annexation of Crimea in 2014 and fundamentally undermined by Russia's full-scale invasion of Ukraine in 2022. The 2022 Strategic Concept named the Russian Federation as the most significant and direct threat to Allied security and to peace and stability in the Euro-Atlantic area (NATO, 2022).

This strategic shift has increased NATO's value for Europe and reduced the credibility of any rapid European strategic substitution. It has also pushed the EU to think more geopolitically about enlargement and about vulnerable regions such as Ukraine, Moldova, and the Western Balkans (Maurice, 2026; Dimitrova et al., 2025). For Southeast Europe, the lesson is clear: as the security environment becomes more dangerous, NATO's deterrent role, backed by the continued engagement of the United States, becomes more important. This is especially true for states facing unresolved disputes, such as Kosovo in relation to Serbia, and for fragile political settings such as Bosnia and Herzegovina. Even NATO members such as Montenegro and North Macedonia are not immune from malign influence, particularly given

Russian hybrid warfare and Serbia's ambiguous positioning between the EU, the United States, Russia, and China (Kuçi, 2024).

3. TRANSACTIONAL ATLANTICISM AND SMALL-STATE DILEMMAS

The second Trump era has accelerated pre-existing transatlantic frictions. The dispute is no longer limited to whether European allies spend enough on defense. It now includes the broader question of whether the United States views Europe primarily as an ally, a burden, a competitor, or a theatre of selective engagement. Criticism of NATO burden-sharing, pressure for higher defense spending, divergent approaches to Ukraine, tensions over Greenland, and unilateral moves in the Middle East have deepened European doubts about the predictability of U.S. leadership (Ischinger, 2026; Matthijs & Tocci, 2026; Kavanagh & Slezkine, 2025; Rose & Jones, 2025).

This does not mean that the transatlantic alliance has ended. A more precise interpretation is that Atlanticism is becoming more transactional. The United States may remain engaged in Europe, but with heavier demands, narrower definitions of interest, and less tolerance for allied free-riding. For European states, this produces a contradictory reality: they must invest more in their own defense capacity, but they also remain dependent on U.S. capabilities for deterrence, intelligence, logistics, nuclear extended deterrence, and strategic depth (Ischinger, 2026; Rose & Jones, 2025).

It is also important to place this shift in a longer U.S. strategic trajectory. Since at least the Obama administration's second term, U.S. strategy has increasingly treated China as the principal long-term competitor and has shifted attention toward the Asia-Pacific and, later, the Indo-Pacific. The National Security Strategies of 2015, 2017, 2022, and 2025, despite differences between Democratic and Republican administrations, all show a gradual concentration of U.S. strategic attention on economic, technological, political, and security competition with China (The White House, 2015, 2017, 2022, 2025). The 2025 National Security Strategy also gives notable attention to the Western Hemisphere and to the idea that Europe should assume greater responsibility for its own defense (The White House, 2025).

Recent U.S. actions have made this broader strategic reorientation more visible. The capture of Nicolás Maduro in Venezuela, the crisis with Iran and the Strait of Hormuz, disputes over tariffs, and the controversy around Greenland have all contributed to a more unsettled transatlantic atmosphere (Congressional Research Service, 2026; Council of the European Union, 2026). These developments do not all have the same cause or significance, but together they have reinforced the European perception that Washington's attention may increasingly be pulled away from Europe or conditioned by transactional bargaining. For Europe, this creates both anxiety and incentive: anxiety because the U.S. guarantee looks less automatic, and incentive because European states have begun to invest more seriously in defense and strategic resilience.

These tensions may also have a constructive side. A United States that shifts attention to other regions can push Europe to become a stronger and more credible partner rather than a passive security consumer. Greater European defense spending, improved industrial coordination, and more realistic strategic planning can strengthen both European autonomy and NATO's European pillar. Still, the political framing matters. If European autonomy is presented as anti-American, it risks deepening the rupture; if it is presented as burden-sharing and strategic maturity, it can make the Alliance more balanced (Gaub & Heist, 2026; Ischinger, 2026).

Small states are exposed first in such moments because they rarely have the luxury of strategic ambiguity. They must maintain security guarantees, preserve access to markets and institutions, and avoid being seen as unreliable by either side. Eastern, Northern, and Southeast European states face this dilemma especially sharply because the Russian threat increases the value of the U.S. security guarantee, while EU accession or EU-linked alignment imposes foreign-policy discipline. Their challenge is not simply to choose sides, but to balance under conditions of uncertainty. This is the context in which the cases of Kosovo and Albania become analytically useful. Both would prefer a strong and coherent transatlantic relationship, therefore neither benefits from being forced into a binary choice between Washington and Brussels.

4. KOSOVA AND ALBANIA: SHARED ORIENTATION, DIFFERENT EXPOSURE

Kosovo represents the more exposed case. Its security outlook remains closely linked to the United States, NATO/KFOR, and the long-term goal of NATO membership. At the same time, the path toward EU integration and alignment with the Common Foreign and Security Policy remains politically indispensable. Non-recognition by five EU member states, non-membership in the United Nations, and the unfinished EU-facilitated dialogue with Serbia all raise the cost of any transatlantic split for Prishtina. Serbia's continued non-recognition of Kosovo, and its efforts to contest Kosovo's international consolidation, make the situation more vulnerable to external influence, especially Russian influence operating through political, media, and proxy channels (Kuçi, 2024).

The Peace Board initiative associated with President Trump illustrates both opportunity and risk. For Kosovo, participation may signal a way to deepen direct cooperation with the United States and to overcome aspects of international isolation at a time when UN membership remains blocked and EU integration is complicated by non-recognition. Former President Vjosa Osmani, framed participation as strengthening sovereignty, international positioning, and the alliance with Washington (Isufi, 2026; Reuters, 2026; Vox Kosovo, 2026). Kosovo's government was more reserved in tone, while opposition parties were more openly supportive; ultimately, however, the Assembly approved the agreement on Kosovo's membership in the Board of Peace (Koha.net, 2026).

Still, the initiative must be handled carefully. Direct bilateral security links with the United States can support capacity-building and international visibility, but they may become sensitive if they are

interpreted as bypassing NATO/KFOR or as moving Kosova away from European integration. For this reason, Kosova's policy should present bilateral cooperation with Washington as complementary to NATO, KFOR, and the EU path, not as an alternative to them. The aim should be to widen diplomatic space without creating the impression of anti-European Atlanticism.

Albania is differently positioned. As a NATO member, it enjoys the protection of Article 5 and has greater institutional room for maneuver. Its EU accession path, however, creates stronger expectations of alignment with EU foreign and security policy. Tirana's likely role in a fragmented transatlantic context is therefore that of a bridge-builder: loyal to Washington, but increasingly embedded in European strategic debates. Albania's involvement in the Peace Board can enhance its international visibility, but it must be managed in a way that does not contradict EU alignment or weaken Tirana's credibility as a future EU member state (Euronews Albania, 2026).

This is particularly important because Albania has recently advanced in the accession process, including the provisional closing of its first negotiating chapters, one of them related to external relations (EWB, 2026). The European Commission's 2025 report also notes that Albania maintained full alignment with the EU's Common Foreign and Security Policy, including restrictive measures and sanctions against Russia, describing this as a strong signal of its strategic choice of EU accession and its role as a reliable partner (European Commission, 2025). This record gives Tirana credibility, but it also increases the cost of any move that might appear to depart from EU foreign-policy discipline.

The relationship between Kosova and Albania also requires separate emphasis. These are not simply two neighboring states with friendly relations. They share a language, culture, history, and strong ethnic ties, with Albanians constituting the overwhelming majority of Kosova's population, accounting for approximately 92% (Kosovo Agency of Statistics [KAS], 2025). Albania's National Security Strategy explicitly identifies support for the consolidation of Kosova's independence and for its European and Euro-Atlantic integration as part of Albania's strategic priorities (Assembly of the Republic of Albania, 2024). This gives the relationship a structural character: Albania's support for Kosova is not only a matter of sentiment or diplomacy, but also a declared national-security interest.

Public orientation reinforces this strategic alignment. Kosova and Albania, and Albanian populations more broadly in the region, are among the most pro-American and pro-European societies in the Western Balkans (Ghitis, 2016; Kraja, 2024; Petrusseva, 2024; INR survey, 2024). This societal factor matters because foreign-policy alignment is easier to sustain when it is supported by public attitudes. In both countries, the political challenge is therefore not to choose between the United States and Europe, but to keep both pillars connected: U.S. security credibility and EU institutional integration.

Comparative Positioning of Kosova and Albania

Dimension	Kosova	Albania
Security baseline	Dependent on U.S. support, NATO/KFOR, and future NATO aspirations.	Protected by NATO membership and Article 5.
EU dimension	EU alignment remains important but is complicated by non-recognition and incomplete integration.	EU accession is a central state objective and a stronger source of policy discipline.
Room for maneuver	Lower, because sovereignty, recognition, and the Serbia dialogue increase vulnerability.	Moderate, because institutional protection is stronger, but obligations are also clearer.
Likely instinct under rupture	Maintain close security ties with Washington while preserving the EU as a central political and economic partner.	Avoid binary choices and act as a bridge between Atlantic loyalty and European harmonization.
Main vulnerability	International isolation, delayed integration, and exposure to Serbia-related destabilization and malign influence.	Pressure to balance Atlantic loyalty with EU harmonization, while remaining exposed to regional spillovers.
Regional and national link	Albania is Kosova's closest strategic partner and advocate in regional and international settings.	Kosova's consolidation and Euro-Atlantic integration are part of Albania's declared strategic priorities.
Public orientation	Strongly pro-American and pro-European public orientation reinforces Euro-Atlantic alignment.	Strongly pro-American and pro-European public attitudes support close strategic alignment with both the United States and Europe.
Overall reading	More security-dependent and more exposed to any transatlantic rupture.	More institutionally safeguarded, but not strategically indifferent.

CONCLUSIONS AND POLICY RECOMMENDATIONS

The central finding of this paper is that transatlantic fragmentation does not automatically force Kosova and Albania to choose between Washington and Brussels. It does, however, make hedging harder, alignment more delicate, and credibility more valuable. The more uncertain U.S.-European relations become, the more these two states must show that they are not merely loyal allies, but capable, predictable, and strategically useful partners.

For Kosova, vulnerability stems from incomplete security and international integration. Its policy should therefore pursue a dual strategy: strengthening the bilateral relationship with the United States while accelerating alignment with EU foreign and security policy. Direct cooperation with the U.S. military and participation in U.S.-led initiatives may be useful, but they should be framed as supportive of NATO/KFOR and Euro-Atlantic integration. Kosova should therefore be careful to present its close relationship with the United States not as a departure from its European path, but as an integral part of its broader Euro-Atlantic orientation, since its long-term consolidation continues to depend on both pillars.

For Albania, the challenge is different but still real. NATO membership gives Tirana a safer baseline, yet EU accession requires careful harmonization with European positions. Albania should use its credibility inside NATO and its regional legitimacy to support Kosova's independence and international consolidation, contribute to stability in the Western Balkans, and promote a language of complementarity between U.S. leadership and European responsibility. Its own national-security strategy already gives a basis for such a policy by treating support for Kosova's Euro-Atlantic integration as a strategic interest.

Three policy recommendations follow. First, both countries should preserve their broader Euro-Atlantic orientation by maintaining close relations with both the United States and the European Union, while avoiding rhetorical or practical choices that present them as mutually exclusive alternatives. Second, they should invest in credibility - defense readiness, institutional resilience, cybersecurity, diplomatic professionalism, and foreign-policy alignment - rather than relying only on loyalty. Third, they should coordinate more closely with each other and with like-minded Western Balkan partners so that regional stability is presented as a contribution to both NATO security and the EU enlargement agenda. For both countries, the prudent route is therefore the same: preserve the Euro-Atlantic future while preparing for a less predictable alliance.

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A RISK ASSESSMENT FRAMEWORK FOR PREDICTING STATE REACTIONS TO MAJOR INTERNATIONAL CONFLICTS: AN INTERDISCIPLINARY APPROACH

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Abstract

This article presents an interdisciplinary risk assessment framework for predicting state reactions to major international conflicts (MICs). Drawing on Rausand and Haugen's risk assessment theory from management science, and incorporating five prominent international relations theories from political science, the framework addresses three structural problems that have limited existing foreign policy prediction: the generalizability problem, the deductive contradiction problem, and the data uncertainty problem. The framework answers three essential questions – "What can go wrong?", "What is the likelihood of that happening?", and "What are the consequences?" – by combining inductive historical sampling, a theory-neutral identification of causal-explanatory factors (CEFs), and a logistic regression model. The article's primary contribution is methodological: it bridges the gap between management science's underdeveloped risk assessment in international conflict contexts and political science's limited predictive capability over state behaviour.

Keywords: Risk assessment; Major international conflict (MIC); Interdisciplinary methodology; Foreign policy prediction; Logistic regression; Causal-explanatory factors (CEFs).

INTRODUCTION

Humans are constantly living in a risky world, and it has become increasingly dangerous in recent years. Since 2022, the full-scale Russia–Ukraine conflict, alongside the outbreak of war involving Iran in the Middle East, has reconfigured the global risk environment, increasing both the frequency and severity of geopolitical disruptions and complicating political risk governance for those responsible for managing multinational enterprises (MNEs) or governing their states.¹ The main reason behind this type of difficulty is the complex political nature of these major international conflicts,² thereby complicating their risk assessment — a prerequisite and essential element for risk management.³ One of the most significant factors affecting the risk originating from major international conflicts is the uncertainty of China's potential involvement⁴ — an involvement that can change conflict dynamics and thereby alter the political risk level thereof.

Behind the Chinese decision to choose different intervention policies, or to choose not to intervene in a conflict, is the CCP regime's own political risk assessment.⁵ Therefore, if academics or practitioners want proper strategic planning and decision-making on issues regarding policies affected by contemporary major international conflicts, studying the Chinese political risk preference for managing their own MIC risk is unavoidable.⁶

However, two disciplinary gaps remain to be tackled. The past six decades' trajectory of political risk assessment studies in management⁷ has yet to expand into the international conflict dimension, and the political science study on Chinese political risk assessment in this regard is still absent;⁸ meanwhile, the

¹ For instance, Michael Power in his 2004 book *The Risk Management of Everything* advocated the idea that "the state as risk manager", and indeed as Robert Mckellar pointed out that "Political risk has been a significant factor in international business since the end of World War Two." (Mckellar, *A Short Guide to Political Risk*, chapter 2).

² The term "major international conflict" used in this paper is defined as a conflict in which China acts as a third party and is indirectly involved, and the conflict costs "at least 1,000 battle-related deaths in a given year" based on Uppsala's concept of "war".

³ This difficulty has been epitomised in the lament from Martin Lindeberg and Staffan Mörndal that "It is possible to statistically calculate the probability of a fire in a house, but there is no way to measure the exact chance of someone making a military coup d'état and what consequences that would have on a company's investments." (Lindeberg & Mörndal, *Managing Political Risk*, 2).

⁴ One of the political risk definitions is that "an uncertainty is political if it relates to a potential government act" (Root, "The Management by LDC Governments of the Political Risk Trade-off in Direct Foreign Investment," 4).

⁵ Due to China's single-party system and the CCP's highly hierarchical intraparty structure, power is heavily concentrated at the top leadership level.

⁶ Because the Chinese involvement in any major international conflict will have global ripple effects beyond the local geopolitical horizon into both business and state governance. Regarding maritime insurance, see: Kilpatrick, "Revisiting The Five-Powers War Risk Exclusion," 551–577.

⁷ Even till the present day (i.e., 2025), this interdisciplinary study remains underdeveloped. In a wide search of "article title, abstract and keywords" on Scopus, the term "political risk assessment" returns only 64 results (among which only one is somewhat related to political risk assessment in international conflict), whereas "risk assessment" returns 1,146,510 results.

⁸ Alongside the governmental, social, and economic dimensions. Because one of the problems behind this limitation of political risk studies is that "narrow definitions of political risk are responsible for the inconclusive and misleading empirical results." (Oseghale, 1993).

foreign policy studies in political science have been repeatedly failed to predict the Chinese reaction to different MICs. Further, the complex nature of these subjects renders their study unable to rely on either management or political science alone.⁹ It must be an interdisciplinary approach to uncover the CCP regime's political risk assessment — one that produces an analytic model "that better represents reality."¹⁰

For example, in the risk identification phase, it is necessary to incorporate international relations theories from political science to explore the potential threatening factors; meanwhile, the foreign policy analysis of Beijing also requires risk evaluation theories from management science to improve predictive capability. In practice, the United States failed to predict Mao's military intervention into the Korean War, and two decades later, the USSR was equally unable to predict Deng's intervention in the Cambodian–Vietnamese War.¹¹ Therefore, the article's interdisciplinary nature lies in two aspects: it is a risk assessment study in the management science field, focusing on the CCP's risk preference while incorporating international relations theories; and it is a foreign policy study in the political science field, examining the CCP's decision-making rationales through the lens of risk assessment theories.

In this paper, the researchers attempt to fill these gaps with an interdisciplinary approach,¹² adopting Marvin Rausand and Stein Haugen's risk assessment approach from the management field to formulate the research framework, then incorporating five prominent international relations (IR) theories from the political science field to identify the risky causal-explanatory factors (CEFs) – the potential rationales that prompt the Chinese Communist Party (CCP) to select different policies for risk controlling the development of major international conflicts.

By answering Rausand and Haugen's three essential theoretical questions – "What can go wrong?", "What is the likelihood of that happening?", and "What are the consequences?"¹³ – the researchers establish a risk matrix reflecting the CCP regime's risk assessment of major international conflicts, based on the identified factors. Policymakers can use this matrix to measure potential risks from China and predict China's future reactions to different major international conflicts, more importantly probabilistic data contained in the risk matrix serves an information input for them to incorporate it into the risk-based

⁹ "Risk management is a multidiscipline involving the identification and valuation of risks as well as controlling and financing any risk which is threatening life and property." (Hamilton, 1988). "[B]usiness managers are seldom trained in how to integrate [political risk] into strategic or operational decisions or how to apply corporate resources to mitigate it." (Mckellar, 2010). "In designing a model for political risk analysis, the relationship(s) between 'hard' economic and 'soft' socio-political variables should be grounded not only in 'tangible' economics, but in social science knowledge and research as well." (Brink, 2004).

¹⁰ Brink, *Measuring Political Risk*, 3.

¹¹ It needs to point out that both were superpowers at their peak during those times, with the best foreign policy analysts and tremendous information in terms of intelligence gathering, yet both were unable to predict the CCP's reactions.

¹² It is a common approach in risk management studies. See: Pidd, Michael. *Tools for Thinking—Modelling in Management Science*. John Wiley, 1996.

¹³ Rausand & Haugen, *Risk Assessment: Theory, Methods, and Applications*, 17.

decision-making (RBDM). The present article focuses on the methodological foundations of this framework.

1. LITERATURE REVIEW

In this section, we review past studies from the two disciplines relevant to the subject. For risk assessment studies, major international conflicts (MICs) remain a largely unexplored area; the review of existing literature is therefore concise and organized chronologically. For international relations studies on Chinese foreign policy toward MICs, the review emphasizes examining the epistemological and methodological problems present in the literature.

1.1 Risk assessment in management science

Much like political science, in the practical dimension, the purpose of management science is to help managers and governors make better decisions and exercise better process control (Pidd, 2003). Making better decisions requires better information. This "better information" in the political risk context is achieved by employing a better political risk assessment – the enablement of recognizing or anticipating political risk (Brink, 2004) – whereby the state or MNE can avoid or minimize the potential negative political impacts on them.

Risk assessment on political issues emerged in the management field during the 1960s decolonization period. Researchers divide its development into three stages:

- **1960s – Enlightenment:** Early scholars worked to understand and describe political risk.¹⁴
- **1970s–1980s – Fast development:** Academic efforts merged with industry needs. Frameworks were devised to help multinational enterprises respond to real-world pressures,¹⁵ while persistent attempts continued to build a universal predictive model¹⁶ — the "holy grail of political risk assessment" (Jarvis & Griffiths).
- **1990s–present – Pragmatic turn:** Repeated failures to create a universal model, combined with practical demands from MNEs and governments, led management studies to abandon grand theory in favor of problem-solving approaches. The field now appreciates the particularities of

¹⁴ Franklin Root's 1968 research *Attitudes of American Executives Towards Foreign Governmental Investment Opportunities*, based on survey data and interviews with 18 different MNE executives, is an exemplar reflecting this embryonic stage's scholarship of political risk assessment.

¹⁵ E.g., one of the landmarks in this stage is Ilan Alon's expansion of Jeffrey Simon's political risk framework into the economic domain.

¹⁶ Such as the Bow-Tie model, the Safety Barrier Diagram, etc. The field also drew heavily from reliability studies, incorporating analytical methods like Bell Telephone Laboratories' fault tree analysis, the U.S. military's Failure Modes, Effects, and Criticality Analysis (FMECA), ICI's Hazard and Operability (HAZOP) method, and risk evaluation methods like the ALARP principle.

different political risks, integrating diverse expertise (finance, epidemiology, counterterrorism, religious studies) to understand and predict political risk development.

In terms of study subjects, this period witnessed a continuous expansion of analytical scope. The first two decades' scholarship, although coming predominantly from economics and management fields, dedicated itself to tackling business issues like expropriation or nationalization (e.g., the Suez Crisis, Gaddafi's Libya) and collateral damage from international conflicts (e.g., the Arab oil embargo, U.S. sanctions on Khomeini's Iran, the Turkish boycott of U.S. products during the Vietnam War¹⁷) in their management of MNEs and multinational organizations over strategic investment decisions and ongoing operations.¹⁸ Hence, from the outset, international politics became a key dimension of risk management study.¹⁹ Thenceforth, the study subject expanded interdisciplinarity into country studies encompassing not only state policies but also economic systems, political systems, and societal attitudes. Beginning from the 1990s, study objects narrowed further, incorporating experts from different disciplines to tackle newly rising phenomena such as financial regulation, disease outbreak, and terrorism.

However, a gap exists in the risk assessment literature within management science: one political risk subject remains untouched – major international conflict. Despite the significant value of this subject for guiding the strategic planning and operations of MNEs and states, existing studies in the field fail to identify the non-market forces or conditions that could become potential threats (i.e., locating potential political risks during the risk identification phase by asking, "What can go wrong?"). This shortcoming is especially evident when the issue involves risky international environments, largely because the political contexts of such phenomena fall outside management science's traditional scope²⁰ – let alone the Chinese case examined in this paper. Consequently, the gap in management's risk assessment field is one of underdevelopment, requiring political science and international relations scholarship to address this deficit.

1.2 Chinese foreign policy on major international conflicts: gaps in political science

On the other hand, political science studies on China's reactions to major international conflicts also have their own problems. International relations (IR) research on interstate behavior is an old field within political science, and its vast body of scholarship is undoubtedly comprehensive and profound. However,

¹⁷ Köse, "Coca Cola is poison, don't drink it," 63–92.

¹⁸ E.g., as forerunners in risk management, Basi in 1963 and Aharoni in 1966 respectively elaborated and highlighted the importance of managing risk for MNEs.

¹⁹ We can perceive this influence in Jeffrey Simon's three-epoch division of political risk studies: Pre-OPEC, Post-OPEC, and Post-Iran — watersheds all marked by the repercussions of major international conflicts (Simon, *Political Risk Assessment*, 62–66).

²⁰ This problem has haunted political risk assessment since the field's inception. One significant issue is that research methods like interviews and focus groups with MNE CEOs are problematic due to their lack of understanding of international politics, leading to mismatched judgments on political events — as reflected in René M. Stulz's agency theory, where MNE executives tend to simply avoid investments to prevent risks they cannot assess.

when it comes to foreign policy prediction, the Chinese case reveals three gaps in political science that remain to be addressed.

The generalizability problem

The majority of past studies on the rationales behind the CCP's decision-making over major international conflicts are case-oriented approaches, focusing on the analysis of either a single specific international conflict²¹ or several conflicts against a thorough review of past conflicts in an analytical period background.²² Geopolitical or reductionist analyses²³ are the main avenue to identify driving rationales such as security concerns, ideological solidarity,²⁴ or to propose a hidden rationale behind the CCP's foreign policy in response to MICs. The problem is that the rationales extracted from different past case studies can be contradictory for the same MIC. A salient example is the ongoing Russian invasion of Ukraine: aiding Moscow can gain its support for China in the hegemonic struggle with the United States, whereas the inevitable sanctions triggered by such a policy will damage or even ruin Chinese economic development - the economic strength being the foundation of military might after all.

The deductive contradiction problem

Parallel to the case-oriented approach, a minor group advances this subject through a theory-oriented approach – studies that either draw from various IR theoretical frameworks to infer strategic rationales behind CCP decision-making on international conflict (as is common among Western scholars)²⁵ or directly assert certain principles or doctrines that CCP policymakers follow (as is more typical among Chinese scholars).²⁶ The problem is that – apart from the theory's own tenability²⁷ and the uneasy relationship

²¹ Some examples: Encarnation and Fair's reflection on Afghanistan War (2023), Shin's analysis of China's attitude to the Ukraine War (2022), Chen's on the Korean Peninsula (2023), Kurita on Himalayan regions (2022), Weinstein on Africa continent (1975, 1980), continent, Chow (2022) and Fan (2012) on China's involvements in Burma during the 1960s, Zhang (2015) on Deng's motive behind the Vietnam War, Wu (2004) on two Iraq Wars, Niu and Ali (2018) on the Syrian Civil War, etc.

²² For example, the RAND Corporation's 2021 report (by Timothy et al.) analysed two case studies of China's military interventions and provided a general review from 1946 to 2018. However, the report remained bringing a case study approach on Chinese military intervention policy through offering descriptive statistics background without exploring the risk assessment rationales behind interventions, their respective weights/probabilities in decision-making, or how different conflicts' features and their changes influence these risk assessments.

²³ The basic assumption of this approach is that a state's foreign policies are outcomes of its national political system, see Waltz, *Theory of International Politics*, chapters 2 & 4.

²⁴ It is a consensus among most scholars of the Mao period. Andrews concluded that Chinese foreign aid between 1956 and 1965 was "designed to exploit weaknesses in the capitalist and Soviet 'revisionist' camps." (Andrews, "Communist China's Aid Diplomacy," 629).

²⁵ For example, Western scholars argued that China's foreign policy is driven by rationales such as "structural forces pushing China to dominate Asia" (Mearsheimer, 2001), "the regime's concern with regional versus structural danger" (Glaser, 2015), or "the increasing Soviet threat leading China to seek rapprochement with the U.S." (Walt, 1987).

²⁶ In contrast, most Chinese scholars emphasise principles like "valuing global security" (Fung, 2019), "the Chinese dream of national renewal" (Yang, 2017), or "China's development-oriented politics versus the West's power rivalry politics" (Qi, 2015).

²⁷ The validity of IR theory is in doubt — e.g., the Domino theory: communists taking over Vietnam in 1975 did not lead to other Southeast Asian states bandwagoning with the USSR.

between IR scholarship and foreign policy practice²⁸. The different theories' assumptions are often at odds with each other, and hence their deductions differ on the same phenomenon.

For instance, we could arrive at drastically different conclusions if we simultaneously apply Mearsheimer's offensive realism and Walt's defensive realism to China's risk assessment of the Soviet–Afghan War: the former would argue against any Chinese involvement in this U.S. proxy war, whereas the latter would suggest it is in China's interests to aid Afghanistan to balance the bigger threat from the USSR. It is hard to tell which theory is right before witnessing the empirical evidence²⁹.

The data uncertainty problem

Finally, the data uncertainty problem originates in a key epistemological consideration. Much of the existing research on this subject belongs to the interpretivist approach.³⁰ However, a key question arises: how can we ensure that records such as CCP foreign policy documents or leadership speeches are truthful representations of the regime's intentions?³¹ Political language is not inherently factual; rather, it is composed of words that can be strategically used. While analytical methods like intertextuality may demonstrate chronological consistency in some statements, this only indicates that the CCP has repeated the same messaging; it provides no insight into the reliability of the statements or whether they genuinely reflect the CCP's intentions.³²

In fact, even if a statement is honest, its significance still depends on the conflict's context, for instance, albeit Mao's own anti-imperialism rhetorics yet China did cooperate with the United States in the Angolan Civil War to aid the adversaries of the Soviet proxy MPLA. Hence, a valid risk concern may be inconsequential, while the true driver of foreign policy lies in the state's vital interests in that conflict. Thus, declared intentions remain mere words until actions confirm them. Hence, the problem is actually about the genuineness of the data, since the relationship between the political language of a subject and the behavior of that subject is not always consistent.

²⁸ See Stephen Walt: "The Relationship Between Theory and Policy in International Relations" (2005) and "Theory and Policy in International Relations: Some Personal Reflections" (2012).

²⁹ A more salient case concerns U.S. commitment to Taiwan: defensive realist Charles Glaser (2011, 2016, 2025) and offensive realist John Mearsheimer (2001, 2018, 2021) hold completely opposite positions.

³⁰ Kevin Rudd's studies on the CCP's foreign policies is an example, in which he often uses Xi's characteristics, worldview, or the Chinese economic situation for his explanations.

³¹ Some instances related to China: Mao declared his Three World Theory while conducting "One Line Strategy" foreign policy aligned with the U.S. against the Soviet; or the CCP's PM Zhou formally announced The Five Principles of Peaceful Co-Existence while sponsoring communist guerrilla movements in Southeast Asian states.

³² Charles Glaser highlights "motives" as a key variable in security policymaking in *Rational Theory of International Politics* (2010), while Stephen Walt emphasises "intention" in *The Origins of Alliances* (1987). John Mearsheimer, in *Why Leaders Lie* (2011), notes that intentions are ultimately unknowable as they reside in policymakers' minds and can change over time.

2. RESEARCH FRAMEWORK

"We could calculate a human being's conduct for the future with as much certainty as a lunar or solar eclipse."

— Immanuel Kant

To predict China's reaction under the CCP regime's governance, we need to understand the risk concerns or rationales that prompt the CCP's policy response to the outbreak of a major international conflict (MIC) in terms of risk control. Since all three types of policies toward MICs are costly to varying degrees, a rational actor would apply them only if they offset or mitigate a consequence that carries an even higher cost imposed by the MIC — this is risk-based decision-making (RBDM)³³ in terms of risk-assessment reasoning.

To comprehend the CCP regime's risk assessment, we must answer Rausand and Haugen's three essential questions: "What can go wrong?", "What is the likelihood of that happening?", and "What are the consequences?"

For the first question, it is posited that the eruption of a major international conflict changes some conditions/environmental factors (i.e., the researchers coined them as "causal-explanatory factors (CEFs)") in the international environment that the CCP considers a risk, and the only reason the CCP would decide to use costly policies to control that risk. For the second question, a statistical relationship must be established between these CEFs and the CCP's risk control policies, respectively. For the third question, the answer is yielded empirically because the CCP's reaction/risk control to each MIC is known through sampling the historical records.

The research conceptual framework is similar to the risk assessment Bow-Tie Model (devised by Imperial Chemical Industries initially).³⁴ As illustrated by *Figure 1* below, in the upper half of the conceptual chart — separated by a dashed line — the research logic on the Chinese risk management of MICs runs left to right: on the left are the different CEFs in the international environment that the CCP regime has identified as potential political risks. Each CEF possesses one of two states — "security" or "threat" — at any given moment. Before the eruption of a major international conflict, these CEFs collectively represent a secure international environment. In the middle, after the MIC eruption, due to changes in some CEFs' states, the CCP evaluates the changed CEFs collectively as representing a threatening international environment. On the right, for regaining security, the CCP regime chooses different political risk control policies to interfere with the major international conflict in order to reverse the CEFs from the "threat" state back to the "security" state.

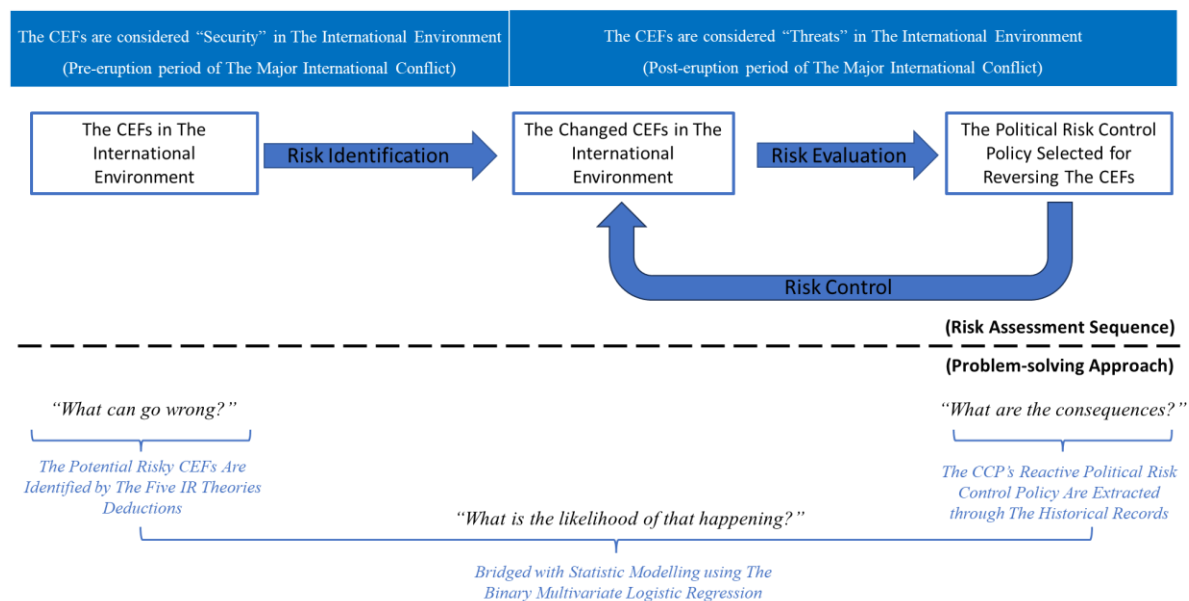
³³ The RBDM was defined by the U.S. Department of Energy (DOE) in *DOE-DP-STD-3023-98* Guidelines (1998), a more elaboration version was presented in the *DOE-G-413.3-7A* Guidelines (2011).

³⁴ Regarding the Bow-Tie Model, see: Rausand & Haugen, *Risk Assessment: Theory, Methods, and Applications*, 26–27.

Corresponding to this causal logic, the lower half of the conceptual chart illustrates the problem-solving approach of this research: on the left, five IR theories are applied deductively to identify the potential risk CEFs, answering "What can go wrong?". On the right, document analysis records the CCP's seven-decade reaction policies on each MIC – answering "What are the consequences?". In the middle, logit regression models bridge the left and right, filtering insignificant CEFs and revealing the probability of occurrence of significant CEFs – answering "What is the likelihood of that happening?".

By accomplishing these steps, this research generates a list of CEFs as significant risk factors/rationales behind the Chinese reactions to MIC, arranged into a risk assessment matrix reflecting the CCP regime's risk preference. State or MNE policymakers can use this matrix to predict China's reactive policy regarding potential or ongoing MICs, and incorporate the matrix's probabilistic information into their own risk management with risk-based decision-making techniques such as decision trees and expected value calculations.

Figure 1. The conceptual framework of the research



3. METHODOLOGY

Addressing the three gaps: methodological alternatives

To address the three problems in Chinese studies on its risk preference behind Chinese reactions to major international conflicts, the researchers adopted the following alternatives.

For fixing the generalizability problem, this study inductively provides systematic evidence reflecting the regime's MIC risk preference over its seven decades of governance (1949–2021), rather than relying on individual case inferences.

For improving the deductive contradiction problem, the researchers adopt a "theory-neutral" position, choosing five time-tested IR theories to identify the CCP's risk concern/rationale of MIC — treating each theory's CEFs as candidate variables to be empirically tested rather than assuming any single theory's primacy.

For mitigating the data uncertainty problem, the researchers adopted a *res non verba* (actions over words) logical positivism approach. Rather than relying on CCP official statements, speeches, or policy documents, this study codes the CCP's actual policy behaviors as the dependent variables, grounding the analysis in observable conduct rather than declared intentions.

These alternative analyses are incorporated into the risk assessment framework described above to generate a risk matrix that reflects the CCP's risk preference in tackling major international conflicts.

Dependent variables: Three categories of CCP foreign policy

This study examines three distinct categories of CCP foreign policy/risk control actions toward major international conflicts, which serve as the dependent variables in the statistical model.³⁵

Military Intervention (*mil_int*) is defined as the deployment of organized CCP military forces larger than battalion size to directly engage in a conflict. This includes actions such as the use of military force in contested areas.

Military Aid (*mil_aid*) encompasses the provision of military advisors, training, intelligence, and small numbers of combatants not organized in a military formation, or military equipment (dual-use products are not included in this category) to a party involved in the conflict.³⁶

Economic Aid (*econ_aid*) refers to the provision of direct funding to a target party in an MIC, or an increase of at least 100% in bilateral trade volume compared to the level before the conflict began.

Measurement challenges and borderline cases

Distinguishing military aid from military intervention in borderline cases (i.e., limited troop deployments below battalion size and not arranged in a military formation) was resolved by scale thresholds. The Korean War (conflict_id = 235) is classified as a military intervention due to large-scale troop deployment.

³⁵ The researchers consider non-linear regression more suitable for this Chinese subject. The logit model also has specific advantages: compared to the probit model, the logit model is better suited for samples with extreme value distributions — not only due to the binary nature of the data (bimodal probability distribution) but also because the frequencies of the two modes are highly imbalanced.

³⁶ Whether delivered directly to the client party or to a neighbouring "conduit state" — as China did with Zaire for militarily aiding the anti-communist UNITA in the Angolan Civil War (see Karlén and Rauta, "Dealers and Brokers in Civil Wars," 108 & Kissinger, *Years of Renewal*, 893).

The Soviet–Afghan War (conflict_id = 333) is classified as military aid, as only equipment, intelligence, training, and advisor support were provided without major troop commitment.³⁷

For other borderline cases, such as conflicts involving the intermittent sending of militias or trainers abroad to support guerrilla movements (e.g., Communist insurgency in Burma, conflict_id = 264; Laotian Civil War, conflict_id = 262), all are subsumed under the military aid category.

Independent variables: causal-explanatory factors (CEFs)

As for the independent variables – the risky causal-explanatory factors (CEFs) – identifying the possible risks that concern the CCP regime is required. This task falls outside the scope of management science and requires expertise from international relations to accomplish. The 30 independent variables investigated in this study are derived from five prominent IR theories, though the significance of their effects remains to be tested by the models. These theories are:

- Stephen Walt's balance of threat theory (defensive realist school)
- John Mearsheimer's great power theory (offensive realist school)
- Robert Keohane's liberal institutionalism theory (neo-liberal school)
- Alexander Wendt's structural idealism theory (constructivist school)
- Mark Crescenzi's economic interdependence theory (classical liberal school)

Due to the length limitations of this article, details on the relationship between each IR theory and its related independent variable(s) are reserved for the empirical article, except for those directly relevant to the discussion of the risk matrix's formation.

The formal model

Based on the above understanding, the risk preference logic behind the CCP's risk control decision-making process on major international conflicts can be formalized as follows:

- F represents the finite set of all possible CCP risk control/foreign policy actions towards an international conflict.
- E represents the finite set of all possible combinations of causal-explanatory factors (CEFs) related to international conflict.

³⁷ For other borderline cases, such as those intermittently sending militias or trainers abroad to support guerrilla movements (e.g., Communist insurgency in Burma, conflict_id = 264; Laotian Civil War, conflict_id = 262), all are subsumed under the military aid category.

- R represents the CCP's preference relation that ranks the foreign policy actions in F .

The research assumption is that the CCP's choice of a specific foreign policy action $C(F)$ towards a particular major international conflict is a rational maximization of its preferences, $Max(R, F)$. Given a specific subset of causal-explanatory factors e (where $e \subseteq 2^E \setminus \{\emptyset\}$), there exists a specific foreign policy action f (where $f \in F$) that is strictly preferred by the CCP ($Max(R, F)$) over any other alternative foreign policy action $\sim f$ (where $\sim f \in F \setminus \{f\}$):

$$e \rightarrow C(F) = Max(R, F) = \{f \in F \mid \forall \sim f \in F \setminus \{f\}, f R \sim f\}$$

To empirically analyze the influence of the causal-explanatory factors (CEFs) on the CCP's risk control foreign policy reactions to MIC, this research employs a binary multivariate logistic regression model to investigate the relationship between the two.³⁸ In the model, the dependent variable is the CCP's choice between three distinct risk control/foreign policy actions within the set F . The independent variables are the CEFs associated with international conflict, represented by set E . Specifically, the model assesses how various CEFs and their combinations e affect the probability of the CCP selecting one specific risk control/foreign policy action f over another $\sim f$. This approach allows examination of the relationship between a binary outcome (the specific CCP's foreign policy/risk control action) and multiple independent variables (the potential CEFs).

The three hypotheses' preliminary model forms are:

$$f(\text{Military Intervention}) = 1 / (1 + e^{-(b_0 + b_1 \text{factor}_1 + b_2 \text{factor}_2 + \dots + b_k \text{factor}_k)})$$

$$f(\text{Military Aid}) = 1 / (1 + e^{-(b_0 + b_1 \text{factor}_1 + b_2 \text{factor}_2 + \dots + b_k \text{factor}_k)})$$

$$f(\text{Economic Aid}) = 1 / (1 + e^{-(b_0 + b_1 \text{factor}_1 + b_2 \text{factor}_2 + \dots + b_k \text{factor}_k)})$$

The null hypothesis of each model — besides the orthodox meaning of no model / a 50%–50% pure guess (i.e., 0.5 when all the coefficients are equal to 0) — can also be construed as the foreign policy actions in the set F that do not constitute the alternative hypothesis. For example, the military intervention hypothesis's null hypothesis encompasses neutrality or any other potential CCP foreign policy actions, insofar as those actions are not accompanied by military intervention.

Rationale for separate non-linear models

A methodological note concerns the decision to use three separate binary logistic regression models rather than treating the CCP's different reactive policies as a single ordinal variable (e.g., ranking from

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economic aid through military aid to military intervention). The latter choice would oversimplify the qualitative differences between these three policy types.

Military intervention, military aid, and economic aid carry fundamentally different strategic risk profiles. Diplomatic or economic aid rarely provokes military retaliation; military aid or intervention carries distinct strategic risks. For example, were it not for Truman's objections, the CCP's military intervention into the Korean War would have led to retaliatory escalation in both vertical dimensions (Douglas MacArthur's proposed nuclear usage in Manchuria) and horizontal dimensions (Chiang Kai-shek's reconquest of mainland China campaign in the south).

The separate models also reveal a clear relativity in the CCP's risk threshold: the conditions that trigger military intervention are much stricter and less frequently met than those triggering military aid, which in turn are stricter than those triggering economic aid. The majority of economic aid's significant CEFs have probabilities above 80%, indicating such a type of risk control is not a high bar to clear vis-à-vis military aid, much less military intervention.

Research data

For the Chinese case three online databases together with other conflict cases related documents and records are used in this research, the online databases are the following:

- Uppsala Conflict Data Program's UCDP/PRIO Armed Conflict Dataset version 22.1 dataset;
- Correlates of War Project's National Material Capabilities (NMC) Data Documentation Version 6.0;
- World Bank's Databank.

Due to this paper does not delve into empirical analysis but concentrates on elaboration of the interdisciplinary research framework, and the sampling processes are reserved for the empirical article.

4. DISCUSSION: THEORETICAL AND METHODOLOGICAL IMPLICATIONS

The framework proposed in this paper carries several broader implications for both management science and political science.

Within management science, this research advances political risk assessment into the major international conflict domain – a subject that, despite its obvious relevance to MNE strategy and state planning, has remained underdeveloped. The framework demonstrates that the limitation is not inherent to the subject matter, but rather a product of disciplinary boundaries: once IR theories are incorporated to identify the relevant CEFs during the risk identification phase, the standard risk assessment logic (threat identification → probability estimation → consequence assessment) can be applied systematically to international conflict contexts.

Within political science, the framework offers a structured response to the three structural problems identified in the literature review. The systematic, inductive sampling of 99 conflicts addresses the generalizability problem by generating findings that are not dependent on a single case. The theory-neutral stance – treating five competing IR theories as equally valid sources of candidate variables, with empirical testing determining which CEFs are actually significant – addresses the deductive contradiction problem by bypassing the need to choose between incommensurable theoretical positions. The *res non verba* positivism addresses the data uncertainty problem by anchoring the analysis in observable state behavior rather than declared intentions.

It is important to note that the framework does not claim to resolve all prediction challenges. As the formal model clarifies, the CCP's risk assessment is modelled as a rational maximization of preferences given the CEFs present at any moment. This is a useful abstraction, but it does not account for the possibility of idiosyncratic individual-level deviations from the underlying preference structure. However, such deviations – where they occur – are likely to manifest primarily in lower-cost, lower-consequence decisions (e.g., diplomatic language, economic aid margins), not in the three high-commitment policy types that are the focus of this study.

The framework's interdisciplinary design also carries a practical implication: it is, in principle, replicable for any state actor that meets the single-party, sovereign-concentration conditions that make the CCP a tractable study object. The CCP's nature as one of the few contemporary single-party systems – whose fundamental calculus has remained stable across leadership transitions from Mao through Deng, Jiang, Hu, and Xi – makes it particularly well-suited for this kind of systematic risk preference analysis. Whether an analogous framework could be constructed for more pluralistic or coalition-based governments would require further theoretical development.

Furthermore, the practice-oriented nature of this problem-solving approach, together with space constraints, limits the paper's theoretical ambitions: it does not engage with IR debates *per se*, but explores the value of linking risk assessment across management and political science. The three selected policy categories – military intervention, military aid, and economic aid – are the most consequential forms of state involvement, given their high commitment, risk, and observable impact on conflict dynamics. Diplomatic responses are excluded as they often blend into baseline relations and rarely alter conflict trajectories.

CONCLUSION

This article has proposed an interdisciplinary risk assessment framework for predicting state reactions to major international conflicts, operationalized on the case of the Chinese Communist Party's foreign policy over the period 1949–2021. The framework integrates Rausand and Haugen's risk assessment theory from management science with five prominent international relations theories from political science, applying

them to a systematically sampled dataset of 99 major international conflicts via binary multivariate logistic regression.

The framework's primary methodological contribution is threefold. First, it extends management science's risk assessment field into the major international conflict domain, where existing scholarship has been largely silent. Second, it offers a structured response to the three persistent problems in political science's prediction of CCP behavior – the generalizability problem, the deductive contradiction problem, and the data uncertainty problem – through inductive sampling, theory-neutrality, and logical positivism, respectively. Third, it produces a formal model that is transparent, reproducible, and capable of generating probabilistic outputs that can be incorporated into risk management's decision-making tools such as decision trees and expected value calculations.

In sum, this research advances management science's risk assessment field into major international conflicts while improving political science's ability to predict CCP reactions through comprehensive sampling, theory-neutrality, and logical positivism.

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MILITARY SPENDING IN THE WESTERN BALKAN COUNTRIES IN THE PERIOD 2015–2025 AND ITS CONSEQUENCES

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Abstract

Tensions between social groups have always existed and are a natural part of humanity's social development, including tensions between states. However, such tensions escalate into conflict only when at least one of the groups involved possesses the means to intensify them. States maintain armed forces as an element of national power to protect their interests. As a result, conflicts between groups represented by states have a greater potential for escalation because states possess military capabilities. Military spending includes state expenditures on the armed forces and other defense-related activities. In the Western Balkans, Serbia significantly surpasses the other countries in military spending. Over the long term, imbalanced military spending leads to unequal military capabilities. The domination of one state's military capabilities over those of its neighbors can increase the risk of conflict escalation, as power imbalances often generate insecurity and mistrust. The Western Balkans have a history of bloody wars and continue to experience unresolved inter-state, ethnic, and religious tensions. Therefore, the negative effects of imbalanced military spending cannot be ignored. Although the presence of the international community, particularly NATO and the EU, reduces the significance of these imbalances, the Western Balkans are not a primary priority for either organization. History demonstrates that military balance is essential for preserving peace and preventing conflict. Therefore, the countries of the Western Balkans should work toward achieving more balanced military spending.

Keywords: Western Balkans, military spending, arms race, militarization of politics, diplomatic tensions

INTRODUCTION

After the violent breakup of Yugoslavia between 1989 and 2001, which resulted in five wars, the Western Balkans entered a phase of relative peace. The presence of NATO and the EU provided the region with a perspective for Euro-Atlantic integration by offering security guarantees, substantial economic assistance, and numerous programs aimed at strengthening democratic institutions. Exhausted by war, suffering, and poverty, people in the region wanted to believe that conflict had become part of the past and integration into the EU and NATO would bring lasting stability and prosperity. The countries of the Western Balkans are currently at different stages of integration into the EU and NATO. In terms of NATO membership, North Macedonia, Albania, and Montenegro have joined the Alliance. Serbia, however, maintains a policy of military neutrality and opposes NATO membership (Serbia, 2009). A similar position is held by Republika Srpska, which has hindered Bosnia and Herzegovina's progress toward membership. Kosovo, despite its political will and readiness to join NATO, has been unable to advance in this process because several NATO member states do not recognize its independence.

Regarding EU integration, none of the Western Balkan countries has publicly opposed membership. At least declaratively, all aspire to become part of the EU, and each has initiated the accession process, albeit at different stages. However, despite the individual nature of EU membership, many of the obstacles encountered along this path are directly related to the unresolved conflicts and tensions within the region. Within the context of these integration processes, a narrative has frequently emerged suggesting that membership in the EU and NATO would diminish or even eliminate the conflicts that persist in the Western Balkans. EU and NATO integration are often portrayed as solutions to the political, economic, and security challenges faced by the Balkan states and their citizens. This narrative may have developed unintentionally through the discourse of international diplomats and local political leaders seeking to promote pro-EU and pro-NATO sentiment in the region. Over time, it has also been embraced by populations disappointed by the slow pace of political and economic progress in their respective countries. The spread of this narrative has influenced political elites throughout most Balkan states, contributing to the belief that EU and NATO integration alone would eliminate the possibility of future conflicts and usher in an era of reconciliation and harmony. This perception has also shaped the defense policies of many states in the region, particularly regarding the issue of military imbalances in the Balkans.

Military spending includes state expenditures on the armed forces and other defense-related activities. Defense spending represents a significant component of state budgets because it reflects the importance attached to national defense, the perception of external threats, and the military ambitions of a state. When one state allocates substantially greater resources to defense than its neighbors, this may generate negative political, diplomatic, security, and economic consequences. Tensions between social groups and states have always existed as part of human social and political development. However, tensions escalate into conflict only when at least one side possesses the capability to transform those tensions into

confrontation. States, as organized political entities, maintain armed forces as instruments of national power to protect their interests. Consequently, conflicts involving states are more likely to escalate because states possess military capabilities. The overwhelming dominance of one state in military spending relative to its neighbors may produce long-term consequences that increase the likelihood of confrontation or conflict. In the Western Balkans, Serbia has clearly dominated regional military spending in comparison to the other states. To illustrate and analyze this dominance, this paper focuses on the period from 2015 to 2023. Serbia's military spending advantage during this period has contributed to an arms race, the militarization of politics, increased diplomatic tensions, and slower economic development across the region.

1. SECURITY SITUATION IN THE WESTERN BALKANS

The dynamics of the security situation in the Western Balkans are critical to understanding the impact of military spending on peacebuilding and the process of reconciliation among the peoples and states of the region. The Western Balkans have a long history of conflicts, wars, and ethnic hostility. The most recent wars occurred during the violent disintegration of the former Yugoslavia between 1989 and 2001. As a result, ethnic, religious, and interstate tensions remain significant. The states of the Western Balkans continue to face disagreements over fundamental issues such as borders, the legitimacy and recognition of states and nations, interpretations of history, denial of war crimes, and the unresolved issue of persons who disappeared during the conflicts. Peace and stability in the region are largely maintained through the military presence of NATO in Kosovo, the NATO membership of Albania, Montenegro, and North Macedonia, and the EU military mission in Bosnia and Herzegovina. In addition, the EU integration process has played an important role in promoting peace and stability throughout the region.

Despite these stabilizing factors, the security situation in the Western Balkans remains fragile and retains the potential for renewed armed conflict. Escalation can occur rapidly, even unintentionally. Existing ethnic and interstate tensions, short-term political events, or long-term state policies can all contribute to the escalation of conflicts in the region. One state policy that may intensify existing tensions is military spending, particularly when a significant imbalance in defense expenditures develops between neighboring states. Such imbalances are especially dangerous in the current international security environment, marked by the prolonged Russia–Ukraine war, ongoing instability in the Middle East, tensions involving Iran and Israel, and growing disagreements between the United States and several European countries. These broader geopolitical developments increase uncertainty and may indirectly affect the stability of the Western Balkans.

2. RESEARCH METHODOLOGY

This article employs a mixed-method research methodology to examine the impact of military spending on peace and security in the Western Balkans during the period 2015–2025. The study adopts a cross-

country comparative approach, analyzing military expenditures among Western Balkan states through several indicators, including military spending as a percentage of GDP, military spending in nominal terms, and military spending per capita.

Quantitative methods are used to identify trends and disparities in defense spending across the region. Descriptive statistics and comparative analysis are applied to assess the scale and dynamics of military expenditures and to better understand the imbalances in military capabilities developing among Western Balkan countries.

To ensure triangulation and strengthen the reliability of the analysis, data are collected from multiple primary and secondary sources, including:

- The SIPRI database;
- Official government documents from Western Balkan countries;
- Reports produced by international NGOs and think tanks; and
- Academic literature related to military spending and regional security.

In addition to the quantitative approach, the study employs a historical and qualitative perspective to contextualize the significance of imbalanced military spending for peace and security in the Western Balkans. This approach enables a broader understanding of how historical conflicts, unresolved tensions, and regional political dynamics influence contemporary security perceptions.

The collected data are analyzed through descriptive, comparative, and thematic analysis. The main variables and themes examined in this study include:

- Military spending as a percentage of GDP;
- Military spending in nominal values;
- Military spending per capita; and
- The impact of military spending on peace and security in the Western Balkans.

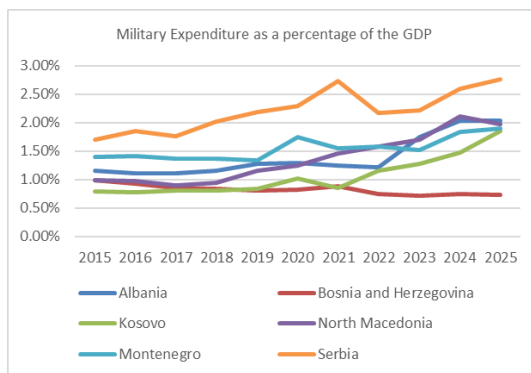
The combination of quantitative and qualitative methods contributes to a deeper understanding of the security risks posed by imbalances in military spending within the Western Balkans and their implications for regional peace and stability.

Comparison of the military spending of the Western Balkan countries for the 2015 – 2025 period

Military spending during the period 2015–2025 covers a full decade, which is sufficient to identify long-term trends and generate significant differences in military capabilities among states. Higher military

spending generally results in better prepared and better equipped armed forces capable of defending national interests, which represents the primary function and outcome of the defense sector. To better understand the implications of military spending, it is important to analyze it through multiple dimensions. First, military expenditure should be compared as a percentage of gross domestic product (GDP), as this reflects the relative importance that a state assigns to defense within its overall economy. Second, spending should be examined in nominal terms (millions of U.S. dollars) to assess the real scale and purchasing power of military expenditures. Third, military spending per capita is an important indicator because it illustrates the level of defense expenditure allocated per citizen. By comparing military spending through these three dimensions, it is possible to obtain a clearer understanding of regional trends, disparities, and imbalances in defense expenditures. At the same time, the development of military capabilities requires not only financial resources but also time, strategic planning, institutional development, training, and technological modernization. Consequently, addressing the negative effects of military imbalances created during this period will require Western Balkan countries to adopt long-term measures and incorporate them into their strategic defense and security planning.

Military spending as a percentage of the GDP

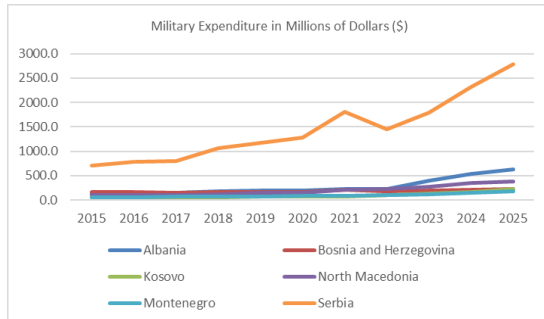


(SIPRI, 2026)

As can be seen from the table, in all reference years, Serbia allocated the largest share of its GDP to defense. Although these percentages may appear relatively modest in absolute terms, when accumulated over the ten years, they contribute to a significant regional imbalance in military spending. This pattern indicates that, despite competing domestic priorities such as education, infrastructure development, youth retention, and other socio-economic needs, Serbia has prioritized investment in defense and the development of its military capabilities. Consequently, the allocation of this share of GDP to defense clearly reflects the strategic and political importance that military power holds within the Government of Serbia's broader state policy. The table also indicates that, in the later years of the observed period, several other countries—aside from Bosnia and Herzegovina—began to increase their military spending as a share of GDP. This trend may signal the early stages of an emerging arms race within the Western

Balkans. Overall, this level of investment in military capabilities suggests that the strategic orientation of the Government of Serbia places considerable emphasis on the use of military force as an instrument of state power in international relations.

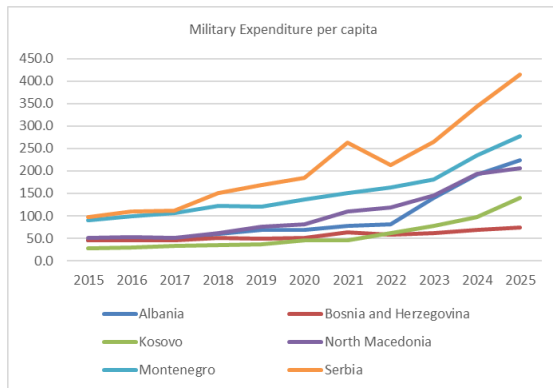
Military spending in Millions of Dollars



(SIPRI, 2026)

As shown in the table, military spending expressed in millions of dollars reflects the real purchasing power of each country and provides a clearer picture of defense capacity. The data clearly illustrate the extent of imbalanced military spending across the Western Balkans. In each reference year, Serbia has spent more on defense than all other Western Balkan countries combined. Particularly notable is the increase in Serbia's military expenditure from 2022 onward. Although other countries have also increased their defense spending as a percentage of GDP in recent years, these increases remain relatively modest in nominal terms and do not represent comparable financial volumes. When Serbia's military spending is assessed in relation to the cost of modern military equipment and systems, it becomes evident that these expenditures are sufficient to support the acquisition of advanced weaponry and the modernization of armed forces. In contrast, other Western Balkan countries remain significantly behind in terms of overall defense investment capacity. As a result, substantial disparities persist in military capabilities across the region. Western Balkan countries, therefore, still face a considerable challenge in addressing and reducing the imbalance in military spending that has developed, particularly in relation to Serbia's dominant position.

Military spending per capita expressed in dollars



(SIPRI, 2026)

As the table shows, in each reference year Serbia has spent more on military expenditure per capita than all other Western Balkan countries. Military expenditure per capita refers to the amount of money spent on defense for each resident of a country; in other words, it is calculated by dividing total military spending by the population size. This indicator highlights the importance and priority that military capabilities hold within Serbia's state policy. In contrast, other Western Balkan countries have generally maintained a more balanced approach, distributing public spending across sectors such as infrastructure, education, healthcare, and other development priorities. However, the table also indicates that in recent years of the observed period, several countries—apart from Bosnia and Herzegovina—have begun to increase their military spending per capita, reflecting a broader regional trend of rising defense expenditure. This increase corresponds with the growing militarization of politics and the escalation of diplomatic tensions in the region. In the case of Bosnia and Herzegovina, internal political dynamics, particularly the position of Republika Srpska, have constrained efforts to increase defense spending. These internal blockages reflect the politicization of defense policy and contribute to broader tensions within the country, as well as its complex relations with neighboring states, including Serbia.

3. CONSEQUENCES OF THE IMBALANCED MILITARY SPENDING IN THE WESTERN BALKANS

What are the negative consequences of this imbalance in military spending in the Western Balkans? As the data show, Serbia dominates military spending in the region. When one country significantly outspends its neighbors in a region with a history of conflict, the resulting military power imbalance can encourage other states to increase their own defense expenditures, thereby triggering an arms race. Evidence suggests that several countries in the region have increased their military spending since 2022, indicating the emergence of such a dynamic. Another consequence of rising defense expenditure in the Western Balkans is the increasing militarization of politics. In order to justify higher military budgets, political leaders and officials often adopt a more rigid and confrontational rhetoric toward neighboring states. Military spending in the Western Balkans during this period, combined with increasingly militarized political discourse, has also contributed to rising diplomatic tensions. In such an environment of

heightened mistrust, diplomatic engagement becomes more difficult and less effective, even on routine issues. Furthermore, as multiple countries increase their defense budgets simultaneously, fewer resources remain available for economic and social development. This diverts public funds away from key sectors such as education, healthcare, infrastructure, and employment generation, thereby slowing overall economic progress in the region. These are among the most significant consequences of imbalanced military spending in the Western Balkans during the 2015–2025 period. If not addressed in a timely and coordinated manner, such dynamics risk further increasing instability and potentially contributing to future conflict escalation in the region.

4. ARMS RACE

But why is the arms race a threat to peace? What do history and scholarly research tell us about this question? These issues are highly relevant for political elites, security professionals, and academics engaged in the Western Balkans, as understanding the effects of high military spending is essential for assessing its implications for conflict escalation. Most scholars argue that arms races increase the likelihood of conflict. An arms race encourages states to compete by continuously expanding their military capabilities in terms of both quantity and quality. In the long term, this dynamic can make prolonged peace feel more burdensome than short-term conflict, thereby increasing incentives for preventive or offensive war. Kant (1795) Rising military expenditure, particularly on arms procurement, also increases the total volume of weapons purchased, transferred, and stockpiled. In the absence of strong regulatory controls, this raises the risk of diversion at multiple stages—during production, transfer, deployment, and through cross-border trafficking. Maletta & Héau (2022) The Western Balkans already experienced such dynamics during the collapse of the former Yugoslavia in the 1990s, when control over stockpiled weapons was significantly weakened. Weapon diversion in such contexts undermines the rule of law, fuels organized crime and terrorism, and contributes to the escalation of violence. Pinson (2022)

Rising military spending also shapes how states perceive threats, often triggering an action–reaction cycle that further accelerates military build-up (Jakobsen & Halvorsen, 2018). The Cold War period following the Second World War represents one of the most prominent historical examples of an arms race shaping international relations. Although direct large-scale war between the superpowers was avoided, the rivalry produced numerous proxy conflicts and sustained global tensions. Empirical research suggests that arms races increase the likelihood of disputes and war rather than reliably producing deterrence. Gibler et al, (2005). As empirical data on the Western Balkans indicates, Serbia’s increased military spending has contributed to the emergence of a regional arms race, as all other Western Balkan countries—except Bosnia and Herzegovina—have increased their defense spending, particularly from 2022 onward. This suggests that Kosovo, as a neighboring state, perceived a security threat and responded by increasing its own military expenditure. In turn, this dynamic appears to have influenced other regional actors, including

Albania, Montenegro, and North Macedonia, to expand their defense spending as well. Despite their NATO membership, these states have not been insulated from regional security competition.

This increase in spending has also been accompanied by the procurement of more advanced weapon systems and military equipment. Serbia has modernized parts of its air force and helicopter fleet, including the acquisition of 11 Rafale fighter aircraft from France in 2023, 10 Mi-series attack helicopters in earlier procurement cycles, upgrades to multiple rocket launch systems in 2018, and the purchase of an FK-3 air defense system from China in 2019. (MoD/SRB/Air/Force, 2025) Kosovo has also expanded its defense capabilities, including the removal of legal restrictions on force development and procurement in 2018 and 2022, and the acquisition of TB2 drones in 2022, becoming the first Western Balkan country to introduce this system. (Prime Minister Kurti, 2023) Albania also acquired TB2 drones in 2023 and has taken steps in 2024 to develop a more robust defense industrial base. (Prime Minister Rama, 2022) North Macedonia and Montenegro, as NATO members, are also engaged in modernization efforts. As tables show, Bosnia and Herzegovina remains more constrained in defense procurement due to internal political divisions and institutional obstacles, particularly those associated with Republika Srpska. Overall, the imbalance in military spending in the Western Balkans—particularly Serbia’s dominant position—has contributed to the emergence of a regional arms race. This arms race is currently ongoing and, if left unmanaged, may increase the risk of future instability and conflict in the region.

5. MILITARIZATION OF POLITICS

Another consequence of increased military spending is the militarization of politics. In such a context, political leaders may begin to interpret pacifist approaches to regional issues as a sign of weakness. Public appearances increasingly include participation in military parades and rallies, and in some cases, political leaders adopt military-style symbols or attire (Finchelstein, 2024). Within militarized political environments, the idea of ensuring peace and security through military strength is often presented as a viable and necessary option; however, when this logic is misapplied or exaggerated, it can contribute to escalation and ultimately undermine the very peace and security it claims to protect (Karlin, 2024). Peace and security are inherently multidimensional outcomes, yet military spending plays a significant role in shaping them. Although defense expenditure is only one input into military capability, over time it can generate structural imbalances that increase the risk of conflict and erode long-term stability. In such contexts, public and political rhetoric often glorifies the military and legitimizes the use of force as a tool for achieving political objectives. At the same time, dominant narratives may dehumanize perceived adversaries, thereby preparing the social and psychological ground for potential future conflicts. Political actors may also interpret isolated incidents or crises through pre-existing hostile narratives, consistently attributing blame to a designated “other.” This pattern bears similarities to how extremist ideologies in the 1930s justified political violence, contributing to the outbreak of the Second World War. Finchelstein (2024).

To justify high levels of military expenditure, political elites in the Western Balkans often adopt increasingly rigid rhetoric toward neighboring states, portraying them as security threats. This, in turn, mobilizes public opinion and helps sustain domestic support for elevated defense budgets. At the same time, many political parties across the region adopt nationalist discourse, as nationalism remains a powerful tool for electoral mobilization. As a consequence, military institutions may gain disproportionate influence over political decision-making, potentially weakening democratic oversight and increasing the risk of political militarization. In Serbia, military deployments near the border with Kosovo have frequently been interpreted as signaling pressure, particularly during sensitive political periods such as elections. Serbia's 2021 defense strategy also identifies the international recognition of Kosovo's independence by other regional states as a security concern, which can be perceived by neighbors as an indirect form of political pressure. MoD of Serbia (2020) In addition, various developments have contributed to heightened tensions in Kosovo, including the withdrawal of Kosovo Serbs from institutional participation in 2022, road blockades in northern Kosovo, and attacks against KFOR personnel in May 2023, which resulted in injuries to approximately 100 peacekeepers. Further incidents include the armed attack in Banjska in September 2023 and the attack on the water supply infrastructure in Zubin Potok in October 2024. International Crisis Group (2025) Regional tensions have also been influenced by political dynamics in Bosnia and Herzegovina, as well as by periodic political rhetoric from Serbian officials concerning Montenegro's national identity. These developments have contributed to the broader militarization of political discourse in the region. As a result, similar patterns of hardened rhetoric and increased ethnic tension have also emerged, to varying degrees, in North Macedonia, Albania, and Montenegro. Ultimately, militarization of politics fosters narratives that attribute domestic challenges to external ethnic or neighboring groups, reinforces historical grievances, and promotes the idea that force is necessary for national survival and security.

6. DIPLOMATIC TENSIONS

Imbalanced military spending can lead to strained relations, increased tensions in negotiations, and reduced willingness to cooperate on issues such as trade, environmental protection, and regional development. Neighboring states may interpret increased defense spending as a sign of aggressive intentions, even when it is officially justified as a defensive policy. The arms race and the militarization of politics further intensify diplomatic tensions and can make even routine cooperation more difficult. International examples illustrate how arms competition can contribute to sustained mistrust between states. The relationship between Turkey and Greece, for instance, demonstrates how long-standing security competition and military buildup can generate persistent diplomatic tensions, despite shared geography and membership in international organizations. International Crisis Group (2021). A similar dynamic can be observed in the relationship between India and Pakistan, where historical disputes combined with military competition continue to fuel instability. Barthwal & Eriksen (2026).

In recent years, the Western Balkans have also experienced heightened diplomatic tensions, which can be linked to broader regional security dynamics, including arms competition and political militarization. The EU-facilitated dialogue between Kosovo and Serbia remains largely stalled, with disagreements persisting over the implementation and formalization of agreements. Serbia continues to contest or downplay aspects of the agreements reached, while Kosovo insists on their formal signing and full implementation. In Bosnia and Herzegovina, the political situation remains highly sensitive, with ongoing tensions in which Serbia is perceived by some actors as supporting separatist narratives within Republika Srpska. International Crisis Group (ICG, 2022) Relations between Serbia and Montenegro have also been strained, partly due to political rhetoric that is interpreted as undermining Montenegrin state identity. In North Macedonia, tensions have occasionally emerged in relation to interethnic relations, particularly regarding the implementation of the Ohrid Framework Agreement, including issues of equitable ethnic representation in public institutions and the use of the Albanian language. International Crises Group (2017) Taken together, these developments contribute to an environment of mistrust and political fragmentation in the region. While not caused by military spending alone, imbalances in defense expenditure can reinforce security dilemmas and exacerbate existing political and ethnic tensions. In the long term, such dynamics risk deepening misunderstandings and increasing the potential for escalation if not managed through sustained dialogue and confidence-building measures.

7. IMPEDIMENT TO ECONOMIC DEVELOPMENT

Increases in military spending continue to impede economic development globally, and the Western Balkan countries are no exception. Tian & Liang (2025). This constraint is particularly significant in small and less economically developed states. Higher military expenditure limits key drivers of economic growth, including the fiscal multiplier effect and employment creation. Regarding the fiscal multiplier, the ratio of GDP growth generated by government expenditure is significantly higher when public funds are allocated to sectors such as poverty reduction, healthcare, education, or infrastructure rather than defense. Empirical studies indicate that spending on health, education, and social protection in European Union member states can generate returns of two to four times the initial investment (Reeves et al., 2013) In contrast, fiscal multipliers associated with military expenditure in both advanced and developing economies are often below one, meaning that the economic return is lower than the initial cost. Sheremirov & Spirovska (2022).

The substantial opportunity cost of allocating large shares of public resources to military budgets has long been recognized in academic literature and by international organizations, including the United Nations. Smith (1980) Certain components of defense spending, particularly personnel costs, carry especially high opportunity costs. For example, research on NATO countries shows that increasing the share of military expenditure allocated to personnel by just one percentage point can reduce GDP growth by approximately 0.026 percentage points. Becker & Dunne (2023) The underlying explanation is that military personnel

spending diverts both labor and financial resources away from productive sectors such as manufacturing, healthcare, and education toward activities with limited direct economic return. Even the commonly assumed positive effects of military spending on employment are contested. Empirical studies across different countries show that higher military expenditure can reduce employment levels in the long term. Garrett-Peltier (2019). In developing and less developed countries, increased military spending is also associated with reduced public investment in health and education. For instance, a 1 percent increase in military expenditure can lead to an almost equivalent reduction in publicly financed health services. Fan (2018).

The Western Balkan countries face persistent economic challenges, and high military spending further constrains their ability to improve infrastructure, healthcare, education, and other development priorities. World Bank (2024) According to the World Bank and related statistical sources, the Western Balkan economies remain among the least developed in Europe, with high levels of unemployment and structural vulnerabilities. World Atlas (2026) The International Monetary Fund also reports that during the 2015–2023 period, unemployment rates in the Western Balkans were significantly higher than in EU member states, particularly among youth and women International Monetary Fund, 2025). In addition, the region has experienced substantial labor force losses due to migration, especially among young and skilled workers moving to EU countries. Despite these economic challenges, Western Balkan countries have continued to increase military spending. This trend has a dual effect: first, it expands armed forces and weapons systems that require long-term maintenance and additional fiscal resources; second, it diverts public funds away from sectors that reduce poverty, unemployment, and inequality while generating higher economic returns. As a result, imbalanced military spending in the Western Balkans contributes to a cycle of further military expenditure and slows overall economic development in the region.

CONCLUSION

Military spending, beyond its economic dimension, also reflects a state's perception of threats and its broader military ambitions. When one state allocates significantly more resources to defense than its neighboring countries, this can generate negative political, diplomatic, security, and economic consequences. Over time, persistent imbalances in military spending lead to unequal military capabilities. The dominance of one state's military capabilities over its neighbors may, in the long run, increase the risk of escalation, as sustained power asymmetry often produces insecurity and mistrust. The Western Balkans have a long history of violent conflict and ongoing inter-state, ethnic, and religious tensions. For this reason, the negative impact of imbalanced military spending cannot be dismissed. In the Western Balkans, Serbia clearly dominates military expenditure compared to other countries. This dominance during the 2015–2025 period has contributed to an arms race, the militarization of politics, increased diplomatic tensions, and slower economic development.

The presence of the international community (NATO and the EU) has reduced—but not eliminated—the significance of military imbalances in the region. EU and NATO membership is often portrayed as a solution to the political, security, and economic challenges of the Western Balkans. This narrative has developed partly unintentionally, promoted by both international diplomats and local political actors seeking to strengthen pro-EU and pro-NATO orientations in the region. It has also been reinforced by public disappointment with domestic political and economic conditions. However, this perception has influenced political programs across most Balkan states (except Serbia) and is also reflected in defense policies, particularly in responses to regional military imbalances. In reality, the Western Balkans are not a strategic priority for either the EU or NATO. The region remains on the periphery of the European Union, not only geographically but also in economic, resource, and security terms. Therefore, Western Balkan countries must recognize the limitations of EU and NATO involvement in ensuring long-term peace and stability. Ultimately, responsibility for peace and security rests primarily with the states of the region themselves.

Empirical data shows that Serbia has dominated military spending throughout the 2015–2025 period, a sufficiently long timeframe to identify clear trends and resulting differences in military capabilities. This dominance is evident across multiple indicators: military expenditure as a percentage of GDP, nominal spending (in millions of dollars), and military spending per capita. Examining these three dimensions provides a comprehensive picture of regional disparities and structural imbalances in defense investment. The development of military capabilities is a long-term process that requires not only financial resources but also institutional capacity, training, and strategic planning. To mitigate the negative effects of accumulated imbalances, Western Balkan countries will need to incorporate corrective measures into their long-term defense and security strategies. In this context, regional states should acknowledge the existing asymmetries and seek cooperative mechanisms to address them, including coordination with the EU and NATO where appropriate.

The imbalanced military spending in the Western Balkans, particularly Serbia's dominance, has contributed to the emergence of an arms race. Arms races increase the likelihood of conflict by encouraging states to compete in expanding their military capabilities. As Kant observed, prolonged arms competition can create conditions in which peace becomes more burdensome than war, thereby increasing incentives for preventive or offensive action (Kant, 1795). In addition, arms races expand the volume of weapons produced, transferred, and stockpiled, increasing the risk of diversion at every stage—from production and transfer to deployment and cross-border trafficking (Maletta & Héau, 2022). Such diversion weakens the rule of law, fuels terrorism and organized crime, and contributes to the escalation of violence. History demonstrates that military balance is essential for maintaining peace and preventing conflict. Therefore, Western Balkan countries should recognize the ongoing arms dynamic and initiate coordinated arms control and limitation measures to prevent further escalation.

Another consequence of increased military spending is the militarization of politics. One early indicator of this process is the growing tendency of political leaders to interpret pacifist approaches to regional issues as a sign of weakness (Finchelstein, 2024). While the pursuit of security through military strength can be a legitimate policy approach, its misinterpretation or overemphasis can undermine peace and stability (Karlin, 2024). Although peace and security are multidimensional outcomes, military spending plays a significant role in shaping them. Over time, defense expenditure can generate such structural imbalances that they contribute to conditions conducive to conflict. Militarization of politics also involves the construction of narratives that assign blame to ethnic groups or neighboring states for domestic problems, reinforce historical grievances, and justify the use of force as necessary for survival and security. In this regard, Western Balkan countries should develop joint initiatives to combat racism, hate speech, and misinformation. In addition, the arms race and militarization of politics contribute to rising diplomatic tensions, making cooperation on even basic issues increasingly difficult. In recent years, the Western Balkans have experienced heightened diplomatic friction, partly as a consequence of these dynamics. Such tensions deepen mistrust and misunderstanding, which, if left unaddressed, may increase the risk of future escalation. Therefore, the region should develop structured mechanisms to improve diplomatic communication and dialogue, where the EU and NATO can play a supportive role.

Finally, increased military spending also constrains economic development. Western Balkan countries already face significant structural economic challenges, and high defense expenditures further limit resources available for infrastructure, healthcare, education, and other development priorities (Tian & Liang, 2025). Despite these constraints, imbalanced military spending continues to drive further increases in defense budgets across the region. Consequently, Western Balkan states should seek support from the EU to condition financial assistance on the gradual reduction and rationalization of military expenditures. In conclusion, Western Balkan countries should work toward more balanced military spending in order to preserve long-term peace and stability. The negative effects of imbalanced defense expenditure are cumulative and mutually reinforcing, and become more difficult to address over time. The assumption that EU and NATO presence alone can neutralize these imbalances is not fully supported by historical evidence. The first and most important step is to increase awareness that the primary responsibility for maintaining peace rests with the states of the Western Balkans themselves. The EU and NATO can support this process, but only if regional states take the leading role in ensuring stability.

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CONTROLLED DELIVERY AND LEGAL HARMONIZATION: ALBANIA'S PATH TO EUROPEAN INTEGRATION

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Abstract

Controlled delivery is perhaps the most important of the special investigative techniques that law enforcement agencies employ in the fight against organized crime, particularly in narcotics trafficking. Controlled delivery allows the movement of illegal goods with judicial permission and under surveillance to identify those involved in criminal activity. Controlled delivery was first recognized in international law in the Vienna Convention (1988) and the Palermo Convention (2000), both of which have been ratified in Albania and are part of the domestic legal system. Controlled delivery is recognized as an effective tool for disrupting transnational organized crime groups. This paper will consider the role of controlled delivery in the context of Albania's evolving domestic legal system, within the framework of modernizing the criminal justice system and Albania's integration into the European Union.

Keywords: criminal justice; controlled delivery; legal reform – Albania; organized crime.

INTRODUCTION

In today's world, organized crime is one of the biggest threats to social order and national security. Globalization, the free movement of people and goods, and advances in technology have all made criminal methods more complex and allowed organized groups to operate and expand the criminal networks across national borders. In this situation, police, prosecution offices, and the courts have had to find new, more effective, and better coordinated ways to identify, investigate, and punish organized crime.

One of these instruments is controlled delivery, a special investigative technique that, with the approval of the competent authorities, allows illegal cargoes to continue their journey under supervision to identify the perpetrators and collaborators in criminal activity.

The importance of controlled delivery is found in its ability to penetrate the highest levels of criminal organizations, providing direct evidence of their structures, roles, and relationships. However, the actual implementation of this instrument regularly encounters difficulties due to the sensitive nature of operational actions, the need for international cooperation, and the need to respect procedural guarantees.

This paper analyzes the theoretical and practical aspects of controlled delivery, its development in Albanian legislation, its compliance with international standards, and the difficulties encountered by investigative and prosecutorial bodies in its implementation.

1. METHODS

The current research uses the qualitative legal approach and the comparative method. In particular, the research methodology centers on controlled delivery and the process of legal harmonization between Albanian law and international standards. The normative interpretation method is used to analyze Article 294/c of the Albanian Criminal Procedure Code. Additionally, a comparative overview of several international documents on the topic that are mandatory for Albania will be conducted. Such documents include the following:

- Single Convention on Narcotic Drugs (United Nations, 1961);
- United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (United Nations, 1988);
- United Nations Convention against Transnational Organized Crime (United Nations, 2000).

The research problem examines whether Albania's CPC laws governing controlled deliveries comply with international treaties. It finds that although Albania had passed laws compatible with international standards, their implementation faces several challenges, including judicial supervision, inter-

departmental cooperation, and enforcement. Since Albania began applying controlled delivery only in 2017 and few decisions have been made in this regard, drawing generalized conclusions is quite difficult.

2. RESULTS AND DISCUSSION

2.1 Theoretical concept of controlled delivery and its history

Controlled delivery enables unlawful or suspicious cargo to pass through national borders under the supervision of responsible bodies, with the intent to facilitate investigation and expose suspects (United Nations, 1988). It presupposes coordination between two or more countries and the prosecutor's approval to facilitate preliminary investigations, usually upon request from foreign bodies. Controlled delivery proved to be especially useful in international drug trafficking, where investigators could keep track of the movement of drugs to their recipients and determine the exact role of criminals involved (United Nations, 2000). Controlled delivery is criticized for its potential overlap with entrapment, stressing the need for judicial oversight to prevent abuse. The judicial bodies must be careful to balance effective crime control and the protection of civil liberties (Colvin, 2002).

With the increasing globalization of organized crime following World War II, the development of international trafficking networks involving narcotic substances, weapons, human beings, and prohibited goods made the classical model of criminal investigation inadequate. That model focused primarily on apprehending offenders in flagrante delicto and on the immediate seizure of unlawful items. In practice, however, immediate arrests struck only the lower links of the criminal chain. This situation created the need for specialized, proactive investigative techniques, in which the state would not intervene reactively but would monitor criminal activity to identify the entire network (Pradel et al., 2009). Controlled delivery is an innovative approach to investigating drug traffickers originating in the US and Latin America without any legal provisions. This institution is foreseen in several international acts. It was first provided for in Article 11 of the United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, signed in 1988. Then came Article 73 of the Convention implementing the Schengen Agreement of 14 June 1985 between the Governments of the States of the Benelux Economic Union, the Federal Republic of Germany, and the French Republic on the gradual abolition of checks at their common borders, signed in 1990. Finally, Article 20 of the Palermo Convention in 2000.

3. CONTROLLED DELIVERY IN INTERNATIONAL ACTS

3.1 The Single Convention on Narcotic Drugs

The international community developed the Single Convention on Narcotic Drugs in 1961, which serves as the basis for global control (United Nations, 1961). The aims of the treaty were the consolidation of earlier treaties into one single convention and ensuring that the use of narcotic drugs remained for

medical and scientific reasons only. The 1972 Protocol to the Convention further developed and strengthened the existing mechanisms.

Controlled delivery is not specifically mentioned in the Convention as a method to investigate a crime of drug trafficking. Nevertheless, it provides a legal base for the struggle against drug trafficking and serves as a foundation for international law and practice. According to the Convention, participating states are required to criminalize the manufacture, sale, purchase, and trafficking of narcotics and adopt appropriate laws and administrative measures to control them.

The spirit of cooperation is evident in Article 35, which calls for coordinating efforts, mutual assistance in implementing legislation, and cooperation with international agencies to tackle illegal trafficking. The urgency of such cooperation is emphasized in Article 35, which requires the timely exchange of documents relating to legislation and law enforcement efforts. Through such cooperation, the convention helps states employ investigative techniques, among them controlled deliveries, in future conventions.

3.2 Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances

The United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances was adopted on December 20th, 1988, in Vienna as an important step of the international community in addressing one of the major threats of that time, i.e., trafficking of narcotic drugs and psychotropic substances. It served as a legal document that aimed to strengthen state cooperation in areas such as combating drug trafficking, money laundering, and the diversion of chemical precursors (United Nations, 1988).

One of the unique features of the Convention includes the acknowledgment of controlled delivery as a method of investigation, which is relevant to the international field. According to Article 11 of the Convention, if the basic concepts of the law of the country in question permit, the states should consider it appropriate to allow controlled delivery during international investigations. As such, it involves the controlled delivery of illicit consignments, including narcotic drugs, psychotropic substances, and chemical precursors, to find and bring criminals to justice.

The Convention underscores that controlled delivery can occur only through agreements among the states involved, thereby guaranteeing their cooperation. It is agreed on a case-by-case basis and may include financial considerations related to jurisdiction. The key thing about this Convention is that it allows consignments carrying illegal drugs to be stopped and either allowed to continue their journey, with the contents remaining intact, seized, or substituted, depending on the requirements of the investigation. Controlled delivery thus becomes an effective means of combating organized crime.

This convention not only established the legal prerequisites for the process in question but also introduced an actual tool. It was realized that a tough stance alone was not enough; additional measures were needed to combat organized crime.

3.3 United Nations Convention against Transnational Organized Crime

The United Nations Convention against Transnational Organized Crime (United Nations, 2000) was adopted by the General Assembly in Resolution 55/25 on 15th of November 2000, in Palermo. It is the leading international instrument against transnational organized crime. This convention includes three additional protocols that address issues related to trafficking in persons, migrant smuggling, and illicit firearms.

According to Article 2 of this Convention, controlled delivery is an approach that allows illegal or suspicious shipments to move through one or more States under the control of relevant agencies to investigate crimes and apprehend criminals. This special investigative technique aims to investigate offenses and identify offenders. The use of special investigative methods, such as controlled delivery, electronic surveillance, other forms of surveillance, and covert operations/infiltration, is regulated by Article 20 of the Convention. This article also provides that States members of this convention must enable appropriate use of special investigative techniques, consistent with domestic law. Controlled delivery is a preventive approach used to trace organized criminal networks, not just the members involved in carrying out specific criminal activities. It is based on the recognition that organized crime is transnational and calls for concerted international action.

3.4 European Union Convention on Mutual Assistance in Criminal Matters

The Convention of 29 May 2000 on Mutual Assistance in Criminal Matters is an EU legal instrument that establishes faster, more efficient judicial and police cooperation across borders. It supplements the 1959 Council of Europe Convention (Council of Europe, 1959) and introduces modern investigative tools such as Joint Investigation Teams (JITs) and covert operations. This Convention represents an important breakthrough for increasing cooperation among the states. An important development that warrants special mention here is the adoption of the principle of controlled delivery as a legitimate method for investigating internationally committed crimes.

Thus, it is possible to give the following definition to controlled delivery: controlled delivery involves allowing illicit consignments of items like drugs, weapons, etc. to transit through one or several jurisdictions in the course of controlled delivery, but not to stop the goods right away, but rather to track their journey to find the criminals.

Importantly, the Convention establishes the condition that controlled delivery should take place with the consent and assistance of the states concerned. Requests for this type of investigation shall be addressed through legal channels and comply with the respective state's legislation. This will provide the legitimacy

of the measure as well as its effectiveness. It is worth adding that the scope of controlled delivery does not cover narcotic offenses alone but is extended to include organized crime, corruption, trafficking, and many other offenses.

With the incorporation of controlled delivery into the scheme of mutual legal assistance in the 2000 Convention, a cooperation model has been developed that ensures effective investigation without breaching the principles of sovereignty and human rights. This aligns with the European Union's general policy of harmonizing criminal law standards across all Member States.

4. CONTROLLED DELIVERY IN ALBANIAN LAW

The introduction of controlled delivery in Albania has resulted from Albania's obligations under the ratified international acts. In 2000, Albania ratified the Single Convention on Narcotic Drugs and the United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances with laws no. 8723 and 8722, dated 26.12.2000 (Center of Official Publications, 2018). With law no. 8920, dated 11.07.2002, Albania ratified the United Nations Convention against Organized Crime and its two protocols (Albanian Parliament, 2002). With these laws, Albania formally binds itself to its provisions and integrates its standards into national law.

In accordance with the requirements stated above, Albania introduced controlled delivery into its Criminal Procedure Code, the primary law that includes it (Albanian Parliament, 1995).

4.1 Criminal Procedure Code on controlled delivery

In 2017, the country made several changes to its Criminal Procedure Code, harmonizing national legislation with European standards and practices. Law No. 35/2017 included controlled delivery by adding Article 294/c, allowing its use as a special investigative method, in line with international standards.

Article 294/c of the Code provides for the prosecution's permission to use such an operation under certain circumstances. It is a special investigative technique involving two or more countries. It is authorized by the prosecutor to conduct the preliminary investigation at the request of foreign authorities (Hasankolli, 2020). Controlled delivery may be applied when individuals suspected of involvement in the illegal transport of narcotic drugs, weapons, stolen goods, explosives, or nuclear materials, radioactive substances, large sums of money, or other proceeds of crime cannot otherwise be identified or arrested. Controlled delivery shall also be used where normal investigation would jeopardize the investigation process, put the safety of any person at risk, or result in the loss or destruction of the objects in transport. The prosecution must make a reasoned decision, which requires the agreement of foreign authorities and constant monitoring. The order of the prosecution must state the identity of the suspect, if known, facts about the illegal nature of the items, as well as the means of control/supervision.

In this type of investigation, the prosecutor serves as the principal figure exercising jurisdiction over the process and ensuring its legality (OSCE, 2020). In the case of the Judicial Police, they become the executing agency once they receive authorization from the prosecutor to carry out the controlled delivery. This expresses the necessity for cooperation and effective coordination between these two organisms (OSCE, 2019).

On the other hand, in the case of controlled delivery, the court's role in Albania becomes apparent during the trial. It consists of monitoring the legality of the prosecutor's decision and controlling the implementation of the investigation technique. The judicial power monitors the evidence collected and checks whether the defendant's procedural rights have been complied with (Albanian Parliament, 1995). Judicial control of this technique entails ensuring legality and protecting individual rights. Thus, during judicial review, attention is drawn to whether the legal conditions for the use of the technique have been met, as well as whether other, less severe measures could achieve the same result (Dervishi, 2019).

The embedding of the controlled delivery procedure into the Criminal Procedure Code is an indication not only of Albania's improved investigative capabilities as well as of the Albanian government's willingness to align national laws with international standards. This policy reflects Albania's general approach to including investigative approaches in national law.

4.2 Other acts on controlled delivery

Law No. 8750, concerning Prevention and Fight against Trafficking of Narcotic and Psychotropic Substances, came into force in Albania in March 2001 (Albanian Parliament, 2001). This law establishes the mechanism for combating drug trafficking in accordance with the provisions of the 1988 Vienna Convention.

The most important innovation introduced by this act was the implementation of controlled delivery as an investigative procedure. Under Article 2, paragraph 2, controlled delivery refers to a form of investigative procedure aimed at enabling police officers to monitor the illegal transit of narcotics and psychotropic drugs or their substitutes or precursors through the territory of one or several states. The main goal of conducting a controlled delivery investigation is to establish both the route of transport and the persons responsible for committing a crime, in accordance with the Vienna Convention and Albanian law.

Controlled delivery, in fact, is used by the Anti-Drug Service to collect evidence and measure the level of involvement of every participant in the crimes committed. Controlled delivery may be conducted within Albanian territory at entry, exit, or passage points. It must be authorized by the General Prosecutor, the prosecutor leading the criminal proceedings in the case, or the prosecutor of the territory where the drugs are discovered.

In the event international transportation is necessary during the controlled delivery, the Anti-Drug Service will seek the General Prosecutor's permission and inform the appropriate authorities in those states of their involvement. In urgent cases, the office can launch the operation without prior authorization, but it must be informed of these steps and be able to alter or even terminate the operation. Coordination of controlled delivery within the national territory is the responsibility of the central Anti-Drug Service. At the same time, international operations require agreement with the state where the delivery will take place, especially when several countries are involved. The Directorate of Criminal Police finances the operation, and all actions taken during the controlled delivery can be used as evidence.

Based on Article 102/4 of the Constitution (Republic of Albania, 1998) and Article 7 of Law No. 8750 of 26 March 2001 "On the Prevention and Fight Against Trafficking of Narcotic and Psychotropic Substances", the Office of the General Prosecutor, in cooperation with the Ministry of Public Order, issued a joint directive concerning the use of special investigative methods in the fight against drug-related crime. The publication of this directive in 2003 provided detailed procedural requirements for employing and conducting controlled delivery operations as a means of special investigation (General Prosecution Office & Ministry of Public Order, 2003). It became evident that this type of investigation could be easily incorporated into narcotics-trafficking investigations by ensuring that all controlled deliveries conform to this guide.

4.3 Controlled delivery in the decisions of Albanian Courts

Because controlled delivery is a relatively new investigative instrument in Albania, introduced with the 2017 amendments into the Criminal Procedure Code, judicial decisions on its application remain limited. Nevertheless, the Criminal Chamber of the High Court addressed its use as a special investigative method in Decision No. 00-2025-1177(182), clarifying the judicial criteria, conditions of application and procedural boundaries within criminal proceedings (High Court of Albania, 2025).

In the present case, it is pertinent to note that the High Court heard the appeal of the prosecution against the Court of Appeal decision. In the case in question, the investigation began with the discovery of suspicious parcels sent to Albania by a Spanish postal operator, which appeared to contain cannabis seeds declared to be of a document type. Following the replacement of the contents, a controlled delivery order was issued, resulting in the detention of the defendant during the process. The trial court sentenced him, however, the Court of Appeal acquitted the defendant because the controlled delivery procedure was unlawful, as it was carried out without a plea for assistance from a foreign authority.

The High Court rejected the above arguments. According to the Court, the provisions of Article 294/c of the Criminal Procedure Code do not require requesting assistance from foreign authorities, except in instances of international cooperation, which did not apply in the case because the suspicious parcel was

already within Albania's territory. The evidence acquired was not to be analyzed separately from other evidence obtained.

This judgment clarified that controlled delivery in Albania could be legally sanctioned by the national prosecuting authority when the illegal shipment was already within national territory.

4.4 Practical Challenges in Albania on Controlled Delivery

Although defined in Article 294/c of the Criminal Procedure Code of Albania as a special investigation technique, controlled delivery has shown certain shortcomings in practice.

First, there is a lack of coordination among the police, the prosecution service, and the customs and border police. Such issues may lead to inefficient processes due to time loss and task repetition during operations (Dervishi, 2019), as well as low conviction rates.

The second issue concerns systemic integrity, given the risks of corruption and delays in the vetting process for magistrates.

Third, there is no effective judicial supervision. While prosecutors approve controlled delivery, its legality is reviewed in court only when the criminal case goes to trial. Thus, judicial participation may result in reduced human rights guarantees compared to those in European Union countries.

Fourth, there is a shortage of resources and technical constraints. Investigative teams cannot operate due to a lack of technical resources and logistical support. The evolution of criminal tactics is small and frequent.

The fifth issue is one of implementation. Even though Albania has implemented reforms to comply with European Union conventions, research shows that large projects are undertaken infrequently, resulting in frequent delays and overruns. Such a problem has adverse implications for timely activities, such as controlled deliveries.

Finally, the country faces challenges in international cooperation. The country collaborates with Europol and Eurojust, but its Code of Criminal Procedure does not seek permission from other countries once consignments have entered Albanian jurisdiction. The situation makes evidence difficult to recognize in foreign countries (European Union, 2000).

5. COMPARATIVE ANALYSIS OF THE ALBANIAN CRIMINAL PROCEDURE CODE ON CONTROLLED DELIVERY

To determine whether the Criminal Procedure Code of the Republic of Albania on controlled delivery fully aligns with European Acts, it is necessary to compare the Albanian Law on controlled delivery with the European Acts.

5.1 Albanian Criminal Procedure Code vs. International Acts

With reference to the International Acts analyzed above in section 3.2, the international community provides for controlled delivery as a cooperative, human rights-driven practice. It is recognized as an instrument of international judicial cooperation, focused on cross-border coordination, and is supervised by competent authorities. These acts are principle-based and have a flexible framework that emphasizes harmonization and cooperation.

In Albania, when Article 294/c of the Criminal Procedure Code is compared with the above-mentioned International Acts, it results that this provision is fully aligned with international standards. Notably, Albanian legislation emphasizes prosecutorial discretion and permits judicial police to execute controlled deliveries under the prosecutor's supervision.

Controlled delivery in the Criminal Procedure Code of Albania is substantively harmonized with international instruments, respecting the same safeguards, procedural authorizations, and cooperation principles required by the United Nations and the European Union. It represents a key instrument in Albania's integration of international criminal justice standards. Although pragmatic and flexible, Albanian law grants prosecutors' wide discretion. Although controlled delivery is subject to judicial review, this oversight occurs only once the case has been brought to trial. From the perspective of international instruments, however, it would be more appropriate for the court, as an impartial authority, to exercise control over the use of this special investigative method from the very outset of its application, through the preliminary investigation judge. Such early judicial involvement would help prevent potential abuse by investigative bodies. In this way, the process would also ensure more effective protection of human rights.

5.2 Albanian Criminal Procedure Code vs. Kosovo Criminal Procedure Code

Albania and Kosovo are in the same region, share social and political similarities, and aim to integrate into the European Union. Both countries continue to receive technical assistance from the European Union to align their national laws and practices with European standards. This is why analyzing the laws of these countries is valuable for this paper.

Kosovo's Criminal Procedure Code reflects international conventions by recognizing controlled delivery as a special investigative method. Article 85, point 6, of this Code defines controlled delivery as the investigative technique of allowing unlawful or suspected consignments to pass into, through, or out of one or more states under the supervision of competent authorities for the purpose of investigating crimes and identifying those involved. Kosovo applies this technique as a covert or technical measure of surveillance and investigation in the fight against organized crime, drug trafficking, smuggling, and other serious criminal offenses. Article 90 of the Code sets out the procedure for authorizing a pretrial judge to

order any of the measures, upon a written request from the state prosecutor (The Assembly of the Republic of Kosovo, 2022).

Kosovo also cooperates with other states and international organizations regarding controlled delivery (Kastrati, 2015). Thus, controlled delivery helped Kosovo to dismantle the international trafficking networks specializing in arms, drugs, and smuggling thanks to agreements with Albania and cooperation with Europol and Eurojust.

To summarize, controlled delivery in Kosovo is a relatively new and efficient investigative method that helps track down and dismantle criminal groups and foster international cooperation in combating organized crime. Meanwhile, there is a need for proportionality and judicial oversight to prevent abuse by investigative authorities.

The comparative study of the criminal code of both countries on controlled delivery highlights these similarities:

- Classification as secret, special/covert investigative measure.
- Definitions aligned to international conventions.
- Passing illicit shipments under state supervision.
- Cross-border consent.
- Need for proportionality and judicial oversight to prevent abuse by investigative authorities.
- Legality and human rights protection.

Whereas the differences between the two countries in the legal provisions on controlled delivery are as follows:

- Albania permits the prosecutor's authorization, and the court later reviews its legality. At the same time, Kosovo provides for the judge's authorization.
- Albania has operational flexibility, whereas Kosovo has centralized procedural safeguards.

Based on this comparative analysis, it cannot be said which country has a "better" law. It depends on whether to prioritize centralized procedural safeguards, as in Kosovo, or operational flexibility, as in Albania. Kosovo has a more modern approach because Western European standards heavily influenced its legislation during the UN administration period. This has resulted in a centralized system with strong judicial supervision designed to prevent the misuse of secret measures.

CONCLUSIONS AND RECOMMENDATIONS

At the end of this paper, the conclusions can be summarized as follows:

- Controlled delivery is a modern investigative technique used to combat transnational organized crime and enhance interstate cooperation.
- This technique should be used more widely, as it does not involve any element of entrapment.
- Albania has new legislation on controlled delivery that is in line with International Acts.
- In practice, the implementation of controlled delivery reveals many gaps and challenges for the Albanian judicial system.
- Albania has to deepen judicial reform in the area of controlled delivery and strengthen inter-agency and international cooperation.

Based on these conclusions, this paper proposes the following recommendations:

- Albania has to deepen judicial reform on controlled delivery:
 - Changing the Procedural Criminal Code, giving the court the right to authorize controlled delivery. This will minimize the abusive use of this special investigative technique and human rights violations.
 - Strengthening inter-agency cooperation.
 - Reducing the backlogs of criminal cases caused by the vetting process.
- Widening international cooperation through Joint Investigation Teams (JITs) and unified information sharing, through evidence standardization.
- The investigative bodies have to focus on high-value targets by dismantling hierarchies and proactively building cases.
- Effective case investigation requires:
 - Modernization of technical capabilities through advanced surveillance and cyber interception, which requires more funding from the State.
 - Training of prosecutors and police officers.

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EUROPEAN INTEGRATION OF KOSOVO AND THE WESTERN BALKAN STATES

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Abstract

This paper examines the European integration of Kosovo and the Western Balkan states in the context of current political, security-related, and international legal developments. The aim is to analyse the position of Kosovo and the other Western Balkan states in the process of alignment with the European Union, identify the main obstacles to integration, and assess the importance of the European perspective for regional stability, democratic reform, and European security. Special attention is paid to Kosovo's contested statehood, the Serbia-Kosovo dialogue, the rule of law, and the geopolitical significance of the Western Balkans after the renewed strategic focus on enlargement.

Keywords: Kosovo, Western Balkans, European Union, EU enlargement, Stabilisation and Association Process, rule of law, security

INTRODUCTION

The European integration of Kosovo and the Western Balkan states remains one of the central questions of contemporary European politics. It is not merely a technical process of legal harmonisation, but a long-term political, institutional, economic, and security transformation. The Western Balkans occupy a strategic position inside the European continent and at the same time continue to carry the institutional legacy of the dissolution of the former Yugoslavia, unresolved bilateral disputes, fragile public administrations, and difficult questions of identity, statehood, and regional cooperation. For the European Union, the region is therefore both a neighbourhood policy priority and a test of the credibility of enlargement as a transformative instrument (European Commission, 2018a; Bieber, 2019).

The European perspective of the Western Balkans has been repeatedly confirmed by the European Union since the Thessaloniki agenda of 2003. However, the distance between political commitment and actual accession has often been considerable. Candidate and potential candidate countries have made progress in selected areas, but they continue to face structural problems connected with the rule of law, democratic institutions, corruption, economic convergence, and regional disputes. Enlargement fatigue within the European Union has also weakened the credibility of the process, while geopolitical crises have simultaneously increased the strategic importance of the region (European Council, 2003; European Commission, 2018a).

Kosovo occupies the most specific position among the Western Balkan partners. It declared independence in 2008, but several EU Member States still do not recognise its statehood. This creates a complex legal and political situation in which Kosovo participates in the Stabilisation and Association Process, cooperates with the European Union, and benefits from the European perspective, but at the same time remains limited by its contested international status and by the unresolved normalisation process with Serbia. The issue of Kosovo therefore demonstrates how European integration in the Western Balkans cannot be separated from questions of international law, recognition, regional stability, and security (Treaty on European Union, 2016; Wessel, 2016).

The aim of this paper is to analyse the European integration of Kosovo and the Western Balkan states in the context of current political and security developments. The paper first explains the framework of EU enlargement policy and the Stabilisation and Association Process. It then examines the position of the Western Balkan states in the integration process, with special attention to Kosovo and the Serbia-Kosovo dialogue. The final sections identify the main obstacles to integration, assess the geopolitical importance of the region, and evaluate possible prospects for future development.

1. METHODOLOGICAL NOTE

The paper uses a qualitative and analytical approach based on the examination of the European Union enlargement framework, the Stabilisation and Association Process, and the specific legal and political position of Kosovo. It does not attempt to measure integration only through statistical indicators. Instead, it evaluates integration as a multidimensional process in which legal approximation, institutional reform, democratic standards, regional cooperation, and security considerations interact with each other. This approach is appropriate because the Western Balkan enlargement process is not determined only by formal accession steps, but also by political credibility, the implementation of agreements, and the ability of domestic institutions to apply adopted rules in practice (European Commission, 2023b; European Commission, 2023c).

The analysis therefore distinguishes between formal progress and substantive progress. Formal progress includes candidate status, the opening of negotiations, the signing of agreements, participation in EU programmes, and the adoption of legislation aligned with the *acquis*. Substantive progress requires the effective functioning of institutions, independent courts, transparent administration, protection of minorities, political accountability, and real implementation of reforms. This distinction is especially important in the Western Balkans, where legal harmonisation can advance while democratic practice and institutional capacity remain weak (European Commission, 2023b).

The paper also treats Kosovo as a specific case within the broader regional context. Kosovo cannot be analysed only as an ordinary potential candidate because its status is contested and because the Serbia-Kosovo dialogue directly affects its European path. At the same time, Kosovo cannot be separated from the general Western Balkan framework because it faces many of the same reform challenges as the other partners, including the rule of law, corruption, economic development, and public administration. The combination of a regional and Kosovo-specific perspective makes it possible to understand both shared obstacles and distinctive legal-political limitations. The paper therefore proceeds from the assumption that integration is successful only when European norms are internalised by domestic institutions and accepted as part of ordinary political and legal practice. This is important because the adoption of strategies, action plans, and legislation may create an appearance of progress, while implementation can remain selective. In the Western Balkans, such a gap between formal commitments and practical application is one of the most persistent weaknesses. The assessment of enlargement must therefore pay attention not only to what states promise or adopt, but also to whether courts, administrative authorities, parliaments, municipalities, and political actors actually operate according to the standards required by the European Union. A purely formal reading of the accession process would not be sufficient for evaluating the prospects of Kosovo and the region (European Union, 2015; European External Action Service, 2023a).

2. EUROPEAN UNION ENLARGEMENT POLICY

The enlargement policy of the European Union is one of the most influential instruments through which the Union promotes stability, democracy, the rule of law, human rights protection, and economic development beyond its current borders. Unlike classical foreign policy tools, enlargement combines political conditionality with a credible promise of membership. Candidate states are expected to transform their institutions, legal systems, and economies in accordance with the values and rules of the European Union. In return, they receive access to political dialogue, financial assistance, institutional support, and, ultimately, the possibility of membership (European Commission, 2020a; Becker, 2018).

The legal and political foundation of enlargement is connected with Article 49 of the Treaty on European Union and with the Copenhagen criteria adopted in 1993. These criteria require stable institutions guaranteeing democracy, the rule of law, human rights, and respect for and protection of minorities. They also require a functioning market economy and the capacity to cope with competitive pressure within the Union. Finally, candidate countries must be able to adopt the *acquis communautaire* and fulfil the obligations of membership. In practice, this means that accession is not a single act but a gradual process of deep legal and institutional adaptation (European Council, 1993; Treaty on European Union, 2016).

For the Western Balkans, enlargement policy has always had a strong stabilising function. The region emerged from the conflicts of the 1990s with weakened institutions, divided societies, and significant economic difficulties. The European Union responded by developing a specific approach that linked reconstruction, regional cooperation, democratic reform, and eventual membership. The European perspective was intended to encourage political elites to resolve disputes peacefully and to create conditions for long-term stability (European Commission, 2018a; European Council, 2003).

In recent years, the strategic dimension of enlargement has again become more visible. Russia's aggression against Ukraine, the growing influence of external actors, migration pressures, and the vulnerability of democratic institutions have all contributed to a renewed understanding that enlargement is not only a bureaucratic procedure, but also a geopolitical investment. The European Commission has repeatedly described enlargement as an investment in peace, stability, security, and socio-economic growth. This understanding is particularly relevant for the Western Balkans, where the credibility of the European perspective directly affects political stability and the orientation of domestic reforms (European Parliament, 2023b; European Commission, 2024a).

At the same time, enlargement policy faces several limitations. The accession process is demanding and often slow. It requires the fulfilment of detailed legal and political conditions, while the final decision remains dependent on the political will of all EU Member States. This creates uncertainty for candidate countries. If the process appears too distant or politically blocked, the transformative power of

conditionality weakens. The European Union must therefore balance strict conditionality with a credible and predictable accession path (Economides, 2020, pp. 112-125).

3. STABILISATION AND ASSOCIATION PROCESS

The Stabilisation and Association Process is the specific framework through which the European Union structures its relations with the Western Balkan states. It was developed as a response to the conflicts and instability that followed the dissolution of the former Yugoslavia. Its purpose is twofold: to stabilise the region through political and economic cooperation, and to prepare the countries for possible EU membership. The process therefore combines peacebuilding, reform conditionality, regional cooperation, and gradual legal approximation (European Commission, n.d.-a; European Commission, 2018a).

The central legal instruments of the process are the Stabilisation and Association Agreements. These agreements establish contractual relations between the European Union and individual Western Balkan partners. They cover political dialogue, trade liberalisation, economic cooperation, institutional reform, and the approximation of national legislation with EU law. Although the agreements do not themselves constitute accession treaties, they create the legal and institutional basis for a future membership perspective (European Union, 2015).

The Stabilisation and Association Process also emphasises regional cooperation. This is particularly important because many of the political and security problems in the Western Balkans are cross-border in nature. Bilateral disputes, minority issues, economic fragmentation, and the legacy of past conflicts cannot be resolved only through internal reforms. The European Union therefore connects the accession perspective with the expectation that countries will maintain good neighbourly relations and cooperate in areas such as infrastructure, trade, security, migration, and justice (Regional Cooperation Council, 2022; Bieber, 2019).

Financial assistance represents another important element of the process. Through the Instrument for Pre-Accession Assistance and related programmes, the European Union supports reforms in public administration, the judiciary, economic development, infrastructure, education, and civil society. Financial support is increasingly linked to concrete reform results. This approach is intended to ensure that European funds do not simply compensate for weak institutions, but help create sustainable administrative and legal capacity (European Commission, n.d.-b; European Commission, 2020b).

For Kosovo, the Stabilisation and Association Agreement is especially significant because it provides a formal framework for relations with the European Union despite the absence of unanimous recognition of Kosovo's statehood by all Member States. The agreement entered into force in 2016 and has become the main legal basis for EU-Kosovo cooperation. It allows Kosovo to participate in structured dialogue, legislative approximation, and sectoral cooperation, while leaving the question of recognition outside the

legal form of the agreement. This demonstrates the pragmatic flexibility of the European Union, but also the limits of Kosovo's integration path (European Union, 2015; European Commission, 2023c).

4. WESTERN BALKAN STATES IN THE INTEGRATION PROCESS

The Western Balkans usually refer to six partners: Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia. All of them have a European perspective, but their positions in the integration process differ significantly. This differentiation reflects the level of reforms, the state of democratic institutions, economic readiness, bilateral disputes, and the political decisions of EU Member States (Bieber, 2019).

Montenegro and Serbia have traditionally been regarded as the most advanced in the negotiation process because both opened accession negotiations earlier than the other countries of the region. Montenegro began negotiations in 2012 and has opened all negotiating chapters, although the pace of closing chapters has remained slow. Serbia opened negotiations in 2014, but its progress is strongly connected with the rule of law, media freedom, foreign policy alignment, and the normalisation of relations with Kosovo. In both cases, the European Union has stressed that formal progress in negotiations must be accompanied by measurable reforms (European Commission, 2023e; European Commission, 2024a).

Albania and North Macedonia entered a more active phase of the process after the opening of accession negotiations in 2022. North Macedonia's path was particularly affected by bilateral disputes, first with Greece over the name of the state and later by additional political obstacles. This illustrates how enlargement can be delayed not only by domestic reforms but also by unresolved issues between a candidate country and individual Member States. Albania has also faced requirements connected with judicial reform, corruption, organised crime, and public administration, but its negotiation process has gained new momentum (European Commission, 2023d; European Commission, 2024a).

Bosnia and Herzegovina represents one of the most complex cases because of its constitutional structure established by the Dayton Peace Agreement. The state is marked by institutional fragmentation, ethnic veto mechanisms, and difficulties in creating a coherent reform agenda. Candidate status granted in 2022 represented an important political signal, but the country still needs substantial reforms to strengthen state functionality, democratic governance, and the rule of law (European Commission, 2023a).

Kosovo remains a potential candidate with a unique legal and political status. Its integration is affected by non-recognition by five EU Member States, by the need to continue reforms, and by the unresolved normalisation process with Serbia. Nevertheless, Kosovo participates in the Stabilisation and Association Process and has gradually strengthened its contractual and practical relationship with the European Union (European Commission, 2023c; Wessel, 2016).

The different positions of the Western Balkan partners show that the region cannot be treated as a uniform block. Each country has a specific institutional and political trajectory. However, the countries share common challenges, including weak rule of law, corruption, low economic convergence, emigration, political polarisation, and vulnerability to external influence. The success of enlargement therefore depends on both national reform capacity and regional cooperation (Economides, 2020, pp. 112-125).

4. THE POSITION OF KOSOVO IN THE INTEGRATION PROCESS

Kosovo's position in the European integration process is defined by a combination of internal reforms, contested statehood, and regional security concerns. Kosovo declared independence in 2008, but its statehood is not recognised by all EU Member States. Spain, Greece, Romania, Slovakia, and Cyprus have not recognised Kosovo as an independent state. This lack of consensus affects Kosovo's ability to move through the accession process in the same way as other Western Balkan partners (Wessel, 2016; European Commission, 2023c).

Despite this limitation, the European Union has developed a pragmatic relationship with Kosovo. The Stabilisation and Association Agreement provides a framework for cooperation, legal approximation, trade relations, and political dialogue. Kosovo also participates in EU programmes and receives financial and technical assistance. This allows the integration process to continue even though the question of recognition remains unresolved. However, the lack of recognition still limits Kosovo's international position and complicates its path towards candidate status and eventual accession (European Union, 2015).

Visa liberalisation represents an important achievement in Kosovo's approximation to the European Union. From 2024, citizens of Kosovo have been able to travel visa-free to the Schengen Area for short stays. This step has practical and symbolic importance. Practically, it facilitates mobility, education, business contacts, and family travel. Symbolically, it shows that concrete benefits can result from reforms and cooperation with the European Union (European Parliament, 2023a; European Commission, 2024b).

Kosovo nevertheless faces significant internal challenges. The strengthening of the judiciary, public administration, anti-corruption mechanisms, and the fight against organised crime remain central conditions for deeper integration. Democratic institutions must also demonstrate stability, transparency, and respect for constitutional procedures. Economic development remains another challenge, especially because of unemployment, emigration, limited investment, and dependency on remittances (European Commission, 2023c; European Commission, 2024b).

The European Union Rule of Law Mission in Kosovo has played an important role in supporting the rule of law. Although its mandate has evolved over time, EULEX remains a symbol of the European Union's engagement in Kosovo's institutional development and security environment. The mission also reflects

the broader problem that Kosovo's state-building process has been closely connected with international supervision and assistance (European Union, n.d.; European Commission, 2023c).

Kosovo's integration path therefore cannot be evaluated only through technical benchmarks. It must also be assessed through the lens of recognition, regional security, and the Serbia-Kosovo dialogue. Progress in internal reforms is necessary, but it is not sufficient if the political relationship with Serbia remains unstable and if EU Member States remain divided on recognition (European External Action Service, 2023a; European Commission, 2023c).

5. SERBIA-KOSOVO DIALOGUE

The dialogue between Serbia and Kosovo is one of the decisive factors for the stability of the Western Balkans and for the European integration of both parties. Since 2011, the European Union has facilitated negotiations aimed at normalising relations. The dialogue is intended to address practical issues, reduce tensions, and create conditions for a comprehensive political settlement (European External Action Service, 2023a).

The Brussels Agreement of 2013 was an important milestone. It established principles concerning local self-government, security structures, the judiciary, and the integration of Serb-majority areas in Kosovo's institutional framework. The agreement was presented as a step towards normalisation and as an essential condition for the European paths of both Serbia and Kosovo. However, implementation has remained difficult and politically contested (Brussels Agreement, 2013).

A key issue in the dialogue is the Association of Serb-Majority Municipalities. For Serbia and the Serb community in Kosovo, this issue is linked to collective protection and local self-government. For Kosovo, it raises concerns about sovereignty, functionality, and the risk of creating institutional structures that could weaken the state. The European Union has repeatedly urged both sides to implement their obligations, but domestic political pressures have slowed progress (European External Action Service, 2023b).

The dialogue is also affected by questions of recognition. Serbia does not recognise Kosovo's independence, while Kosovo seeks full international recognition and membership in international organisations. The European Union has generally focused on normalisation rather than explicitly requiring formal recognition, but in practice a legally binding and sustainable arrangement is necessary for the European integration of both sides. Without stable relations, neither Serbia nor Kosovo can realistically complete the accession process (Wessel, 2016; European Commission, 2022).

Security incidents in northern Kosovo have demonstrated the fragility of the situation. Tensions around local elections, police presence, border issues, licence plates, and the position of the Serb community have repeatedly escalated. These developments show that the dialogue is not only a diplomatic exercise

but also an urgent security mechanism. Failure to normalise relations risks destabilising the wider region and weakening the credibility of the European Union as a mediator (European External Action Service, 2023b; European Commission, 2024b).

The United States also plays an important role, often supporting the EU-facilitated process and encouraging compromise. Nevertheless, the European Union remains the main framework because accession conditionality gives it a unique instrument of influence. The success of the dialogue will depend on political will, credible implementation, and the ability to connect short-term crisis management with a long-term settlement (European External Action Service, 2023a; European External Action Service, 2023b).

6. MAIN OBSTACLES TO THE INTEGRATION OF THE WESTERN BALKAN STATES

The integration of the Western Balkan states is slowed by several interrelated obstacles. The first and most important is the weakness of the rule of law. Independent courts, effective prosecution services, transparent public administration, and protection of fundamental rights are essential for EU membership. In many countries of the region, however, judicial independence remains fragile, corruption is widespread, and political influence over institutions continues to be a serious problem (European Commission, 2023b; European Commission, 2023f).

Corruption and organised crime undermine public trust and economic development. They also create direct difficulties for accession because the European Union places the rule of law at the centre of the negotiation process. Modern enlargement methodology gives special importance to the fundamentals cluster, which includes judiciary, fundamental rights, justice, freedom and security, democratic institutions, and public administration reform. Without credible progress in these areas, technical alignment with EU legislation is insufficient (European Commission, 2023f).

Political polarisation is another obstacle. In several Western Balkan states, political competition is highly confrontational, parliaments are often blocked, and public institutions are used as instruments of party struggle. Such polarisation weakens democratic culture and reduces the capacity to adopt long-term reforms. European integration requires continuity, expert administration, and broad political consensus, which are difficult to achieve in an unstable political environment (European Commission, 2023b).

Bilateral disputes and unresolved status questions remain a major barrier. The Serbia-Kosovo dispute is the most visible example, but the region also contains disputes concerning identity, language, borders, minority rights, and historical interpretation. The European Union requires good neighbourly relations because unresolved disputes can later be imported into the Union. This requirement is reasonable, but it also means that accession can be delayed by issues that are politically sensitive and difficult to resolve (European Commission, 2018a; European Commission, 2022).

Economic underdevelopment is also significant. The Western Balkan economies remain below the EU average in terms of income, infrastructure, productivity, and investment. High unemployment and emigration reduce human capital, while dependency on external financing limits economic autonomy. The European Union has responded with investment plans and the Growth Plan for the Western Balkans, but economic convergence remains a long-term challenge (European Commission, 2020b; Regional Cooperation Council, 2022).

Another problem is enlargement fatigue inside the European Union. Some Member States are cautious about admitting new members before internal EU reforms are completed. Concerns include institutional efficiency, budgetary consequences, migration, the rule of law, and the possibility of importing bilateral disputes. These concerns can weaken the credibility of the membership perspective. If candidate countries believe that accession remains distant regardless of reforms, domestic support for difficult reforms may decline (Economides, 2020, pp. 112-125).

Finally, external influence complicates the process. Russia, China, Turkey, and other actors seek to strengthen their presence in the region through energy, infrastructure, media narratives, cultural ties, or political support. This does not automatically prevent European integration, but it creates competing incentives and may weaken alignment with EU foreign and security policy. The Western Balkans therefore represent a geopolitical space in which the credibility of the European Union is constantly tested. Public communication is also a relevant obstacle. In many parts of the region, citizens support EU membership in principle but are frustrated by the slow pace of accession and by domestic elites who use European language without changing political behaviour. This creates space for Euroscepticism and for narratives claiming that the European Union applies double standards. Maintaining public trust therefore requires visible benefits, honest assessment of reforms, and clearer explanations of what accession requires in everyday institutional practice and political decision-making in the region (Blockmans, 2010, pp. 89-104; Bieber, 2019, pp. 45-60).

7. GEOPOLITICAL IMPORTANCE OF THE WESTERN BALKANS

The Western Balkans have a geopolitical importance that exceeds the size of the region. Geographically, the region is located inside the European continent and connects Central Europe, South Eastern Europe, and the Mediterranean area. Instability in the Western Balkans can directly affect migration routes, organised crime networks, energy security, border management, and political stability in neighbouring EU Member States. For this reason, the region is not external to European security but part of it (Bieber, 2019, pp. 45-60).

The war in Ukraine has strengthened the strategic importance of enlargement. It has shown that unresolved grey zones in Europe can become vulnerable to external pressure and destabilisation. The European Union has therefore increasingly presented enlargement as a geostrategic investment. This

applies not only to Ukraine and Moldova but also to the Western Balkans, where the European perspective has existed for more than two decades but has not yet produced accession (European Parliament, 2023b; European Commission, 2024a).

The region is also important because of the influence of external actors. Russia has traditionally used political, energy, media, and historical narratives to maintain influence, especially in Serbia and among some Serb communities in the region. China has expanded its presence through infrastructure financing, trade, and investment. Turkey has cultural, historical, and economic ties in several parts of the region. These external influences are diverse and cannot be reduced to a single pattern, but they demonstrate that the Western Balkans are part of a broader geopolitical competition (Blockmans, 2010, pp. 89-104).

For the European Union, the integration of the Western Balkans is therefore a matter of credibility. If the Union cannot integrate a region surrounded by EU Member States and formally promised a European future, its ability to act as a geopolitical actor is weakened. Conversely, successful integration would demonstrate that the EU can transform its neighbourhood through law, institutions, and economic cooperation (European Commission, 2018a; European Council, 2023).

Kosovo is particularly important in this geopolitical context. Its contested status, the presence of NATO through KFOR, the EU role through EULEX and the dialogue process, and the involvement of the United States make Kosovo one of the most sensitive security issues in South Eastern Europe. Stability in Kosovo affects relations between Serbia and the West, the position of Serb communities, and the credibility of international peacebuilding efforts after the conflicts of the 1990s (European Union, n.d.; European External Action Service, 2023a).

The geopolitical importance of the Western Balkans does not mean that accession should be automatic. On the contrary, geopolitical urgency must be combined with rigorous reforms. However, it does mean that the European Union has a strategic interest in making the accession path credible, politically visible, and connected with tangible benefits for citizens (European Commission, 2023b; European Commission, 2024a).

8. PROSPECTS FOR FUTURE DEVELOPMENT

The future of European integration in the Western Balkans depends on the interaction between reforms in the region and political decisions within the European Union. The countries of the region must continue strengthening democratic institutions, the rule of law, public administration, and economic competitiveness. At the same time, the European Union must maintain a credible enlargement perspective and avoid transforming the process into an indefinitely postponed promise (European Commission, 2023g; European Council, 2023).

One possible direction is a more gradual integration before full membership. The European Union has increasingly discussed access to parts of the single market, participation in programmes, and financial support linked to reforms. Such gradual integration can provide concrete benefits and maintain public support. However, it should not replace the final objective of membership. If gradual integration is perceived as a substitute for accession, it may weaken rather than strengthen the process (European Commission, 2024a).

The Growth Plan for the Western Balkans and related reform agendas represent attempts to combine economic incentives with institutional reforms. By linking financial assistance to concrete reform results, the European Union seeks to accelerate convergence and reward progress. This approach can be useful, but it requires transparent evaluation and equal treatment of all partners (European Commission, 2020b; European Commission, 2024a).

For Kosovo, future progress will depend on three main factors. The first is the continuation of internal reforms, especially in the judiciary, public administration, anti-corruption policy, and economic development. The second is the implementation of obligations arising from the dialogue with Serbia and the reduction of tensions in northern Kosovo. The third is the ability of the European Union to manage the problem of non-recognition among its Member States. Without progress on these three levels, Kosovo's European path will remain limited (European Commission, 2023c; European Commission, 2024b).

For Serbia, the normalisation of relations with Kosovo is equally important. Serbia's accession process cannot be separated from its regional policy, democratic standards, media freedom, rule of law, and foreign policy alignment. The European Union will have to maintain a consistent approach in which progress is rewarded but backsliding has consequences (European Commission, 2022; European External Action Service, 2023c).

For the region as a whole, the success of integration will depend on whether Europeanisation becomes more than a formal administrative exercise. Legal alignment must be accompanied by genuine institutional change. Citizens must see improvements in justice, public services, economic opportunities, and political accountability. Otherwise, the enlargement process risks becoming technical language disconnected from everyday life (European Commission, 2023b; Economides, 2020, pp. 112-125).

The most realistic future is therefore a differentiated process in which countries progress according to reforms, but within a stronger regional and geopolitical framework. Montenegro and Albania may move faster if reforms continue. Serbia and Kosovo will remain strongly affected by the normalisation process. Bosnia and Herzegovina will need deeper constitutional and institutional functionality. North Macedonia will require protection from repeated bilateral blockages. In all cases, the credibility of the European Union will remain decisive (European Council, 2023; European Commission, 2024a).

CONCLUSION

The European integration of Kosovo and the Western Balkan states is a complex and long-term process that combines legal approximation, political reform, regional reconciliation, economic development, and geopolitical strategy. The European Union has provided the region with a clear European perspective, but the practical realisation of this perspective remains uneven and difficult (European Commission, 2018a; Bieber, 2019).

The Stabilisation and Association Process created a framework for cooperation and gradual preparation for membership. It has supported reforms, trade, financial assistance, and regional cooperation. Nevertheless, the Western Balkan states continue to face serious obstacles, especially weak rule of law, corruption, political polarisation, bilateral disputes, economic underdevelopment, and external influence (European Commission, n.d.-a; European Union, 2015).

Kosovo represents the most specific case because its European integration is shaped not only by domestic reforms but also by contested statehood and the unresolved relationship with Serbia. The Stabilisation and Association Agreement and visa liberalisation demonstrate that progress is possible, but full integration requires a sustainable normalisation process and a clearer European path despite the problem of non-recognition (Wessel, 2016; European External Action Service, 2023a).

The geopolitical importance of the Western Balkans has increased in the context of broader European security challenges. The region is not peripheral to the European Union's interests; it is part of the European security space. A credible enlargement policy is therefore necessary not only for the development of the Western Balkans but also for the stability and strategic credibility of the European Union (European Parliament, 2023b; Blockmans, 2010, pp. 89-104).

The success of European integration will depend on the willingness of the Western Balkan states to implement genuine reforms and on the willingness of the European Union to maintain a predictable and credible accession process. If both conditions are met, integration can contribute to peace, stability, democratic consolidation, and long-term development in Europe as a whole (European Council, 2023; European Commission, 2023b).

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CITIZENS' PERCEPTIONS OF E-GOVERNANCE EFFECTIVENESS AND THEIR IMPACT ON TRUST IN PUBLIC INSTITUTIONS

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Abstract

The expansion of e-governance has led to significant transformations in how public services are delivered, raising important questions regarding the perceived effectiveness of such services among citizens. This paper aims to examine how citizens tend to perceive the effectiveness of e-governance in improving service delivery, transparency and accessibility. More specifically, the study aims to demonstrate if higher perceptions of e-governance are linked to higher levels of trust in public institutions. The research employs a qualitative methodology primarily based on document review, analyzing academic literature and policy reports from organizations such as Organization for Economic Co-operation and Development and European Commission. The findings suggest that higher institutional trust is linked to the perceived efficient and user-friendly services. On the other hand, negative perceptions related to e-governance services tend to hamper trust. The study is important as it contributes to the growing body of research on digital governance and highlights the role of citizen perception in shaping the success of digital governance initiatives.

Keywords: E-Governance, Public Trust, Citizens, Effectiveness

INTRODUCTION

Recent developments in digital technologies have enabled the way governments interact with citizens, deliver public services and ensure their institutional legitimacy. This has been facilitated by e-governance which could be defined as the use of information and communication technologies which mainly consist of internet-based platforms. The aim of this has been to enhance government operations in terms of efficiency, transparency and accessibility (Britannica, n.d). Such processes have gained widespread acceptance within the last two decades as governments have utilized this technology for more efficient administrative processes, less bureaucracy and to promote citizen participation. As these systems have gained greater relevance in public administration, understanding how citizens perceive their effectiveness and how then this perception influences trust in public institutions has become an important element of policy and scholarly research.

Trust in public institutions remains one of the key elements of democracy. This is reflected in how citizens tend to respect the law, participate in political processes and how they react toward s public policies. Nevertheless, many countries have experienced lower levels of trust in governments which has then led to doubts over the legitimacy and resilience of democracy. According to OECD (2024), trust is impacted by factors such as citizens' opinion over the government's performance in terms of how reliable, responsive, fair and transparent their governments are. In this regard, e-governance could be perceived as a tool with the potential to increase the trust of citizens through the improvement of services and greater transparency. Nevertheless, the effectiveness of e-governance is not only dependent on technological development but also on how citizens tend to experience these systems.

In general, the perception of e-governance effectiveness from the citizens is dependent on several factors such as the quality of services, ease of use, transparency, data security and accessibility. As maintained by Dorasamy (2025), e-government systems which are efficient and user-friendly tend to positively impact the attitude toward the government. On the other hand, inadequately designed and unreliable systems have a negative impact on the trust. It is therefore important to analyze not only how effective these systems are but also how these systems are perceived.

As already mentioned, several studies tend to suggest that effective e-governance leads to greater trust to public institutions. For example, studies have shown that platforms that lead to better access to information and less administrative difficulties leads to a better perception of the government competence and integrity (Rahman et al., 2026). Furthermore, open data portals and online service tracking tend to contribute to less corruption and more accountability that then leads to greater trust (Nyadzi & Morris, 2025). Such findings suggest that e-governance is not only a technological innovation but could serve as a tool for reform and trust-building.

It is however important to realize that the relationship between e-governance and trust is impacted by several factors such as digital literacy, inequalities of socio-economic status and infrastructure. This has been an issue particularly in less developed countries because of lower technological development. In addition to this, there are concerns over privacy and cybersecurity in the context of the digital governance landscape. According to several studies, trust could be negatively affected by data misuse and breach even when the services are efficient (Kemboi & Premanandam, 2026). In this context, it is important for governments to ensure that there is proper data protection and ethical governance in regards to maintaining public confidence.

Artificial intelligence and data-driven governance have further complicated the relationship between e-governance and AI. AI-based systems have the potential to enhance decision-making, facilitate public services and can also improve administrative efficiency. Nevertheless, this also leads to questions over accountability, transparency and bias. According to George & Klaus (2026), the integration of AI in governance must be accompanied by careful regulation to ensure that such processes do not negatively impact democratic values and trust. In this regard, citizens' perceptions of such technologies will play an important role if those are perceived as tools for the betterment of democracy or advancements to be wary of.

Several global experiences with e-governance tend to demonstrate the importance of effectiveness in shaping trust. Countries that have already used digital governance systems characterized by proper service, strong security measures and transparency tend to exhibit greater levels of trust and political participation. In fact, according to the European Union's Digital Decade eGovernment Benchmark (2025), the success of digital governance in various countries is dependent on the quality of services and user-centric design. These insights suggest that governments must not only care for technological adoption but also for the user experience when designing such systems.

After such considerations, the aim of this paper is to examine the relationship between citizens' perceptions of e-governance effectiveness and their trust in public institutions. The central thesis of this paper is that high-quality, transparent and user-oriented governance services tend to have a positive impact on the citizens' trust in government while ineffective systems tend to lead to the opposite. In this regard, several theoretical frameworks and empirical studies from various contexts will help us better understand how public trust is shaped by digital governance.

The study is important because it adds to the debate over governance, technology and democracy and how citizens' perceptions affect the success of e-governance initiatives. As governments undergo the process of digital transformation, they also must consider the impact of trust as a means for sustainable governance practices.

1. METHODOLOGY

This paper mainly employs qualitative research methods. More specifically, the study was conducted through a very thorough process of document review that involved contemporary scholarly research in the field of governance and citizen perception on such processes. In addition to this, relevant mechanisms such as the European Commission and Organization for Economic Co-operation and Development were also used to better understand the institutional approach to e-governance. The paper also made a vast use of several policy reports and other documents in order to analyze the phenomenon from both theoretical and empirical perspectives in order to gain a better understanding of the successes and failures of e-governance implementation. Of course, there are limitations as the integration of AI into e-governance remains in its nascent stage and more research will better shed light on the topic. Nevertheless, ultimately, the paper represents an attempt to provide a general overview of the relationship between e-governance and trust.

2. CONCEPTUALIZING E-GOVERNANCE AND PUBLIC TRUST

E-governance and public trust remain two interconnected concepts in the context of modern public administration and rapid digital transformation. It is therefore important to conceptualize both these terms and to provide an analysis on how digital governance tends to impact the relationship between citizens and the state. While e-governance is related on the technological and administrative aspects of governance, trust is generally linked to the citizens broader perceptions of institutional legitimacy and the levels of competence and integrity.

E-governance is generally defined as the application of information and communication technologies to government processes with the goal of enhancing the delivery of public services, improving administrative efficiency and contributing to citizen participation (Britannica, n.d). The definition goes beyond the digitization of services and involves a transformation of governance structures in which the adoption of digital tools by governments leads to more transparent, accountable and citizen-oriented systems. Contemporary e-governance is characterized by a plethora of activities which include online service delivery, systems of digital identity, digital voting, open data and other interactive platforms that facilitate the relationship of citizens and policymakers (Kader & Noor, 2025).

From a conceptual perspective, e-governance exists in multiple dimensions. First, there is the component of service delivery which utilizes digital platforms as tools for more efficient government services. Second, it includes the component of information dissemination which allows citizens access to data and policy information. The other component is that of the facilitation of interaction and participation which allows citizens to better communicate with government institutions and contribute to decision-making processes. The role of these dimensions is aimed at creating a more efficient and inclusive governance

system which is aligned with relevant global policy frameworks such OECD's Reinforcing Democracy Initiative which stresses the role of digital tools in enhancing democracy (OECD, 2024).

Public trust as a concept involves citizens' confidences in the actions, decisions and goals of public institutions. It is impacted by the experiences with government services and perceptions of institutional performance. According to OECD, trust in public institutions is shaped by factors that involve reliability, openness and fairness (OECD, 2023). Trust therefore is not based only in results, but also in how these results are achieved.

Academic literature tends to distinguish between institutional trust and interpersonal trust. While institutional trust refers to confidence in systems, rules and institutions, interpersonal trust is linked to individuals within those institutions. In the context of e-governance, institutional trust is particularly relevant as individuals tend to consistently interact with digital systems rather than individuals. This highlights the importance of system design, usability and transparency as factors leading to various levels of trust.

First, the relationship between e-governance and public trust can be perceived throughout the lens of performance-based trust. This means that citizens tend to evaluate government institutions based on the quality and reliability of their services. When such systems function properly by being timely, accurate and accessible, they signal competence and professionalism which leads to more trust. There is empirical evidence that supports this view which makes a link between high-quality services and citizens' satisfaction and trust in government services (Dorasamy, 2025).

Transparency is another important factor in the relationship between e-governance and trust. Digital platforms allow governments to share information openly which then allows citizens to monitor the institutions and hold them accountable. Studies show that more transparency through e-governance tends to reduce information asymmetry which strengthens the perceptions of fairness and integrity (Nyadzi & Morris, 2025). In this regard, e-governance is not only linked to the quality of service delivery but also to the legitimacy of public institutions.

However, the conceptual relationship has its particular complexities. First, trust in e-governance citizens is shaped by citizens' perceptions of risks associated with data privacy and cybersecurity. Since digital interactions are linked with the exchange of personal information, there are always concerns about data misuse or other actions that may impede trust. Research indicates that protection of security and privacy are crucial aspects regarding the trust in digital governance (Kemboi & Premanandam, 2026). This highlights the dual nature of e-governance: while it can serve as a tool for trust building, it can also erode it if not properly utilized.

Inclusiveness remains another important aspect. For e-governance to positively affect trust, it must be accessible to all parts of society. There is a significant challenge in terms of digital divide as there are clear differences in regards to access to technology and digital literacy. This is a crucial challenge as individuals who are excluded from digital services, may perceive the governments as less accessible which then hinders trust (CORE, 2020). The component of inclusiveness remains a key component of effective e-governance and a key factor for trust-building.

The proliferation of artificial intelligence tends to complicate the conceptual landscape further. In this regard, AI-driven governance has the capacity to improve efficiency and allow data-driven decision making, but they can also hinder aspects such as transparency, accountability and may lead to more bias. According to George & Klaus (2026), the integration of such technologies into governance must be accompanied by relevant ethical frameworks which ought to ensure that technological advancements do not adversely affect public trust. The perception of these technologies by citizens will play an important role as to what will be their factual impact on trust.

It can be concluded that e-governance and public trust are interconnected through various dimensions which include service quality, transparency, security and inclusiveness. In this regard, e-governance serves both as a means of improving the governance processes and a mechanism for shaping citizens' perceptions of institutional legitimacy. When properly implemented, it has the potential to lead to greater levels of trust through greater competence, openness and responsiveness. Nevertheless, its success ultimately is linked to how citizens tend to experience such systems which emphasizes the importance of user-centered design and ethical principles of e-governance.

3. CITIZENS' PERCEPTIONS OF E-GOVERNANCE EFFECTIVENESS

Citizens' perceptions regarding the effectiveness of e-governance remain key in the evaluation of digital public service initiatives. While technological development and digital transformation are important to governments, ultimately the impact of such initiatives is measured by their perceived usefulness, accessibility and trustworthiness. Main aspects that tend to impact such perceptions are service quality, accessibility and past experiences with other government institutions.

One of the most important factors that tends to shape the perception of citizens' perceptions is whether such platforms are perceived as usable and accessible. According to Muhimpundu & Jianxun, aspects such as simplicity, clean user interfaces and system responsiveness tend to play an important role on how citizens perceive digital service (2023). Intuitive platforms which are easy to navigate are seen as effective tools that facilitate their interaction with government agencies. On the other hand, inadequate systems prone to technical issues or those perceived as complex tend to lead to negative perceptions and lower adoption rates.

Another important aspect in relation to the evaluation of e-governance effectiveness is its perceived usefulness. A study in the *Journal of Public Service* posits that e-government services are viewed positively by citizens when they lead to greater efficiency, less waiting times and fewer administrative processes (Geiller, 2023). For instance, services such as online tax filing, digital licensing and electronic health systems contribute to citizens' convenience as they eliminate the needs to visit government offices. When these benefits are realized by citizens, they tend to contribute to their perception of the governance systems as effective.

Trust is another important factor regarding citizens' perceptions. As e-governance platforms require citizens to provide sensitive private information, this leads to concerns over data security and privacy. A recent study published in the *Administrative Sciences* (Popescu et al., 2024), aspects such as security, transparency and institutional reliability tend to have an important impact on the trust of digital government services. The protection of data coupled with greater accountability tends to contribute to greater confidence in e-governance systems. Conversely, doubts over the data protection and lack of transparency do undermine public trust and lead to lower perceived effectiveness.

Socio-demographic factors such as education level, age and digital literacy also play an important role on citizens' perceptions. A study focusing on citizens in Kerala, India showed that people with higher levels of education and digital skills have a more favorable view of the e-governance as they are better able to navigate such platforms (Asif & Siddique, 2022). On the other hand, populations with lower levels of digital access and less access to technology face greater barriers which negatively impact their engagement. This factor leads to less favorable perceptions of e-governance and demonstrates the need for bridging the digital divide and ensuring greater access to e-government services.

Cultural and contextual factors are also important on how citizens perceive e-governance effectiveness. For example, in contexts where traditional bureaucratic systems are perceived as corrupt, e-governance is viewed positively as a tool with the potential to enhance transparency and accountability. A recent study emphasizes that citizens associate digital governance with less corruption and improved services when such systems are implemented adequately. However, in contexts where there is a low trust in government institutions, citizens tend to remain skeptical on these digital innovations regardless of their technical prowess (Oztaskin et al., 2024).

Another important aspect that influences perception is the level of citizen participation and involvement in e-governance processes. Another study notes that when citizens perceive themselves as being involved in these decision-making processes or have the opportunity to provide feedback, this leads to higher perception of effectiveness. Features such as complaint portals, feedback systems and service tracking denote greater transparency and give citizens a sense of empowerment (Muhimpundu & Jianxuni, 2023).

This participatory approach leads to higher levels of user satisfaction and deepens the relationship between governments and citizens.

Ultimately, the perceptions of e-governance effectiveness are a product of several factors such as usability, usefulness, trust, socio-demographic aspects and influences related to particular contexts. It must be noted that positive perceptions lead to citizens embracing digital governance initiatives while negative perceptions lower their effectiveness regardless of technological advancements. It is therefore vital for governments to have a citizens' - centric approach that focuses on aspects such as accessibility, transparency, security which contribute positively to the public perception and thus increase the probability for the success of e-governance systems.

4. CHALLENGES TO TRUST IN E-GOVERNANCE

Trust represents an important component for the successful adoption of e-governance and its sustainability. While digital governance is linked to greater transparency, efficiency and better services in general, there are various challenges that undermine citizens' trust. These challenges are multifaceted as they involve technological, institutional, social and perceptual issues which reflect the complexity of trust in digital governance.

One of the most significant challenges is related to cybersecurity and data protection. As e-governance systems rely heavily on processes concerning sensitive personal and institutional data, they remain prone to cyberattacks. In this regard, vulnerabilities regarding system design, encryption mechanisms and potential cyber threats might lead to risk of data breaches and unauthorized access (Hwuang et al., 2024.; Ndzabela et al., 2025). As digital infrastructures expand, the potential for cyberattacks increases and thus leads to greater concerns from the citizens. These risks are not only of a technical nature, but they also tend to damage public confidence in digital government platforms.

Closely related to cybersecurity is the problem of risk perception and uncertainty. In this regard, citizens' willingness to trust e-governance systems is linked with the perceived potential issues related to digital interactions. Research indicates that potential risks such as identity theft, data misuse and other system failures might outweigh perceived benefits, especially in contexts in which there are limited levels of digital literacy (Gupta et al., 2024). Furthermore, this discrepancy between perceived risks and benefits can discourage adoption of such technologies and reduce the trust in e-government services. It must be noted that trust is not only impacted by system performance, but also by how institutions manage and communicate such risks.

Institutional and governance weaknesses remain another issue. In fact, effective e-governance is not only linked to advanced technological infrastructure, but also to governance frameworks that ensure accountability, transparency and regulatory compliance. However, many governments face problems in

implementing the right tools that ensure information regarding security policies and consistent procedure standards. Issues such as weak coordination, unclear responsibilities and inadequate oversight mechanisms can lead to weak systems and inadequate service delivery (Nyadzi & Morris, 2026). Such gaps can lead to less trust in both digital systems and public institutions.

The legal and regulatory environment are also key factors impacting the trust landscape. As technological advancements tend to develop faster than appropriate legal frameworks, issues regarding data protection and privacy remain persistent. Inappropriate regulations can expose citizens to risks and reduce their confidence regarding the security and legitimacy of e-governance systems (Shboul et al., 2014). Issues such as cross-border data flow and those of digital sovereignty can lead to concerns over the control of citizens' data which then leads to skepticism toward e-governance.

Societal norms, historical experiences and levels of institutional confidence also play a role in the trust that citizens have for e-governance and public institutions. Research in sociology shows that there seems to be a relationship between the current levels of trust in government institutions and trust in e-governance. More specifically, societies in which there is already low trust in government institutions might lead to lower levels of trust in e-governance which the opposite remains accurate for high-trust environments which tend to accept digital services to much greater levels. This leads to the conclusion that trust in e-governance is deeply influenced by broader socio-political dynamics.

As mentioned earlier, digital divide further impacts trust challenges. Specifically, unequal access to digital infrastructure and lower levels of digital literacy tend to impact how citizens perceive e-governance services. Individuals with lower levels of technological skills and access might face difficulties in accessing such platforms which leads to feelings of frustration and exclusion (Hwang et al., 2004). This then might lead to distrust, particularly when there is a perception that such technologies tend to benefit only particular segments of population. Inclusivity and accessibility remain key themes in building equitable and trustworthy digital governance systems.

The complexity of trust in e-governance as illustrated by the case of Estonia which is often perceived as the leader in digital governance. While Estonia is characterized by advanced digital infrastructure and highly efficient services, the country has faced the phenomenon of "paradox of trust" in which system performance does not necessarily lead to higher levels of trust (Arkonsou, 2025). In this regard, technological excellence does not mean higher levels of trust as factors such as transparency, communication and proper institutional behavior remain important factors.

Finally, aspects such as technological complexity and system reliability tend to influence trust too. As e-governance systems become more sophisticated, this might lead to lower levels of transparency that prevents citizens from understanding how decisions are made and how data are processed. This scenario tends to produce uncertainty and skepticism, particularly when such systems do not produce the

necessary outcomes (Ndzabela et al., 2025). Ultimately, reliability, clarity and user understanding are clear components for maintaining trust in e-governance systems.

CONCLUSION & RECOMMENDATIONS

E-governance has become one of the recent relevant developments in the contemporary administrations. Its impact on the service delivery and overall functioning of administrative processes has had a transformative impact in regards to how governments have proceeded with the service delivery. In fact, e-governance has been associated with faster and more efficient administrative services, which have been designed in such a way as to better meet citizens' needs. Nevertheless, the focus of the paper was to analyze the impact of such e-governance processes on the broader institutional trust.

On a positive, note, e-governance is associated with better service delivery, greater efficiency and it has often perceived as a technology with the potential to enhance transparency and citizen participation. Furthermore, improvements in user-interface design have allowed citizens to interact better with these technologies. AI developments have further enhanced these tendencies in order to facilitate the process.

On the other hand, there are also issues in regards to privacy and data protection. In fact, concerns regarding the misuse of the data remain relevant concerning aspects in relation to the use of e-governance processes. In this regard, e-governance processes are perceived as tool that might yet be subject to various difficulties that hinder their effectiveness.

Citizens' perception of-governance processes remains a key factor in building or hindering trust in such systems and governments as a result. In this regard, well-functioning and transparent systems are associated with higher levels of trust in governments. However, such processes are impacted by several factors such as digital literacy, societal context and even previous levels of trust in governments.

In the context of e-governance and public trust it becomes necessary for such processes to fulfill several relevant criteria such as technical effectiveness in terms of providing simple and user-friendly design that are inclusive; technologies that are transparent and accountable and that such systems are sensitive to privacy data. E-governance and public trust remain two interconnected aspects in the sense that proper e-governance systems tend to have a positive impact on the levels of trust that citizens have on public institutions. Nevertheless, the effectiveness of such processes remains dependent on a variety of factors that will always affect the implementation of such systems. Finally, it is necessary for governments to work on the successful blend of technical factors, frameworks and democratic health if such systems are to produce the optimal results.

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ARTIFICIAL INTELLIGENCE DIPLOMACY AND CONFLICT RESOLUTION IN INTERNATIONAL POLITICS

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Abstract

Artificial intelligence will shape the future of diplomacy. Artificial intelligence is becoming an extremely powerful tool and countries are competing nowadays to create new artificial intelligence applications to have an impact on the balance of power and international relations in the world. The study hypothesizes that the use of more artificial intelligence tools in global politics will have a positive impact on conflict resolution and will thus lead to more management of conflicts using peaceful methods.

To aid political leaders in their decision-making processes, a number artificial intelligence tools have been designed to decrease existing uncertainties and to support decision makers and enhance their insights to facilitate their decisions in both domestic politics and international relations.

The extensive use of artificial intelligence and machine learning along the emergence of different artificial intelligence applications such as Chat GPT, Deep seek, Copilot, AI Arbitrator, Dispute resolution AI has led to a change in political decision-making processes worldwide and is likely to have a critical effect in the upcoming years. For example, Natural language processing (NLP) can allow mediators to use a specific tone that can help reach agreements and conducting negotiations with people using tact and mutual respect.

Thus, the study pinpoints the usage of artificial intelligence and its' effect on diplomacy throughout studying the most important technological advancements and how it can be used by diplomats. In addition to presenting a number of recommended artificial intelligence tools to enhance decisions of world leaders in foreign affairs.

Artificial intelligence is indispensable no doubt; it has its' pros and cons. Some decision makers are considering how to make use of it either in domestic policies or foreign policies. Other decision makers prefer not to use it. But this will no longer be possible because Artificial intelligence is a reality.

Keywords: Artificial Intelligence – Diplomacy – Conflict Resolution- International Politics.

INTRODUCTION

Artificial intelligence is not only just transforming technology but it is also redefining the nature of diplomacy itself. Artificial intelligence is transforming everything from climate prediction to military strategies. Nowadays, Artificial intelligence applications negotiate, predict conflicts shaping international relations and influences balance of power between states. And as diplomacy is not only about states, also non-state actors are using it to impact international relations as well.

Artificial intelligence can detect military troops movement, disinformation, it can be used in autonomous weapons, amplify disinformation, thus countries are considering discussing artificial intelligence treaties.

Politics will not be the same after artificial intelligence. As foreign policy begins were domestic policy ends, so we are now discussing usage of artificial intelligence in international relations not domestic politics. In international politics, each state in the world is capable of producing consequences in every part of the globe by a direct application of its power or because ideas can be transmitted almost simultaneously or because ideological rivalry gives vast symbolic significance even to issues which are minor in geopolitical terms.

After the second world war the number of states increased and a new equilibrium was established in international politics. Later on, more upheavals erupted, there were always risks posed by modern technology (Kissinger, 1974). Thus, the emergence of artificial intelligence applications is predicted to change the balance of power in the international system.

Artificial intelligence is transforming the landscape of international relations and specifically international relations and negotiations by providing numerous advanced tools and methodologies that enhance decision-making and strategy development.

1. ARTIFICIAL INTELLIGENCE DEFINED

Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy. It stands for the imitation by computers of the intelligence inherent in humans.

A common definition of AI is that it is a technology that enables machines to imitate various complex human skills. The use or study of artificial intelligence or computer systems that have some of the qualities that a human brain has, such as the ability to interpret language, recognize images, and learn from data supplied to them) that are able to produce text, and images. The term “Artificial Intelligence” was officially coined at the Dartmouth Summer research project 1956. AI is the science and engineering of making intelligent computer systems.

Prior to that, in 1950, English mathematician and computer science pioneer Alan Turing posed the question, “can machines think?” in his paper, “Computing Machinery and Intelligence,” Turing laid out what has become known as the Turing Test, or imitation game, to determine whether a machine is capable of thinking (Turing, 1950, pp.433-460).

AI systems are software systems designed by humans that display intelligent behavior by analyzing their environment and taking actions with some degree of autonomy to achieve specific goals. AI is a broad branch of computer systems focused on creating systems capable of performing tasks that typically require human intelligence such as recognizing speech, making decision or translating languages.

Artificial intelligence is enabling the development of invaluable services and taking part in more and more aspects of our lives. Built from data, hardware and connectivity, AI allows machines to mimic human intelligence such as perception, problem-solving, linguistic interaction or creativity. These technologies contribute to achieving the 2030 Agenda for Sustainable Development.

However, these rapid changes raise major issues. UNESCO addresses these matters, from ethics of AI, AI in education, gender equality (UNESCO, 2026). Artificial intelligence also raises concerns regarding safety, security, and privacy.

2. ARTIFICIAL INTELLIGENCE AS A TOOL IN DIPLOMACY

Artificial diplomacy refers to how countries manage their international relations regarding artificial intelligence. It’s the whole range of activities nations use to deal with the challenges and opportunities presented by artificial diplomacy. Diplomacy is the answer to the world right now Wars need to be curbed and diplomacy is the way out. In a world dominated by force, war and violence, diplomacy should be our call. Violence needs to be restrained. Wars must end.

So, the study focuses on pinpointing the new artificial intelligence applications and how they can be used in diplomacy. The main hypothesis is that the new artificial intelligence applications have both a positive and a negative impact on diplomacy.

3. POLITICS IN THE ERA OF ARTIFICIAL INTELLIGENCE

The study tackles the impact of artificial intelligence applications on politics specifically on diplomacy. Before shedding light on diplomacy, we will discuss the impact of artificial intelligence on politics in general then we delve through diplomacy.

In the midst of the digital transformation that the world witnesses in our daily lives, it affects all the life aspects. Related to the political impact of artificial intelligence, the world witnesses an impact of artificial intelligence on politics from different aspects; elections, wars, political decision-making, and public policies.

Artificial intelligence is being a political tool as a result of technological development through big data, machine learning, and computing power. Chat bots as ChatGPT will make a massive shift in the field of artificial intelligence. Then more programs started to appear such as copilot, deep seek and Gemini.

In addition to that, a lot of political and social issues have been transformed into technological problems through new technology. No doubt that artificial intelligence is becoming a tool of power in the hands of countries and will impact a lot its power and thus balance of power in the world.

Artificial intelligence presents powerful tool to enhance decision making in the diplomatic field, economic prediction, commercial analysis, wars and elections. New researches in the field of artificial intelligence is expected to be better in prediction and presenting strategic views transcending traditional methods in decision making and policy making.

The study raises several research questions: Does artificial intelligence applications spread around the world is a tool that enhances state power or is a threat to democratic political systems? Will machines replace humans in making policies? Will there be limits to what artificial intelligence can do in politics and diplomacy? What are these limits?

Moreover, artificial intelligence has an impact on politics through presenting new concepts such as "Artificial Intelligence power or Artificial power "in addition to tackling new problematics such as the impact of artificial intelligence on wars, diplomacy, justice, equality and elections.

4. POLITICS OF SCIENCE AND TECHNOLOGY

Some observers imagine that technology and scientific advancements have no impact on the political sphere. This perception is undoubtedly mistaken. The philosopher Martin Heidegger, in his book "The Question Concerning Technology," which discusses the essence of technology, pointed this out. Although the book was published decades ago, the issues Heidegger raised in his work remain relevant today, for example, in his treatment of the problem of human subjectivity in the face of technological development. He wrote: "Everywhere we remain unfree and chained to technology, whether we passionately affirm or deny it" (Watts, 2013).

In her book "The Human Condition," Hannah Arendt (1998) also pointed out that the question of technology is inevitably a political one. With technological advancements in artificial intelligence, a number of new issues arise, such as the impact on the dissemination of information, the spread of misinformation, wars and armed conflicts, and a re-evaluation of the concept of power and power relations between states and between individuals within different societies.

5. ARTIFICIAL INTELLIGENCE POWER

In simple terms, artificial intelligence (AI) is the machine's imitation of human intelligence. It is the technology that enables machines to exhibit human-like capabilities, such as making independent, unbiased decisions and mimicking human creativity and intelligence. It is a technology with problem-solving abilities similar to those of humans.

Currently, AI is considered an element of power for nations possessing advanced technological infrastructure. In the coming years, the world will witness significant changes in contemporary politics, and from another perspective, developments in political dynamics could influence AI. Countries are now racing to capitalize on the latest scientific discoveries in artificial intelligence. Many nations have already employed it in the political sphere, for example, in elections, warfare, and development.

The increasing efficiency and capabilities of artificial intelligence have influenced the course of elections in numerous countries. In the United States, for instance, studies on public opinion have been published, and various experts have offered their perspectives on the role AI will play in influencing voters. Several studies have indicated that artificial intelligence (AI) programs may contribute to the spread of misinformation that could influence the course of elections. AI can manipulate social media by distorting voter voices, and its use can also facilitate the dissemination of misinformation. Furthermore, AI can influence voters, for example, to convince them that voting is pointless (United States Election Assistance Commission).

Artificial intelligence programs can be used to produce unrealistic images and fake videos. These AI-powered programs generate fake audio, images, and videos called deep fakes, which are then used in election campaigns. In the United States, twenty-six states have passed laws regulating the use of these deep fakes. Some states have taken the approach of banning them altogether or identifying their authenticity. Two states, Minnesota and Texas, banned the dissemination of these deep fakes several days before elections (NSCL foundation for State legislatures).

6. THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE SUBFIELDS OF POLITICAL SCIENCE

All subfields of political science, from political thought and political philosophy to international relations and political systems, are affected by artificial intelligence. From a political thought perspective, the use of AI in political life raises several issues, such as the ethics of AI, the nature of human subjectivity, the impact of postmodernism on established political values, and the effect of AI on concepts like power, justice, and equality. From the perspective of AI's impact on international relations, it has influenced cooperative relations between states, for example, impacting public diplomacy, and even influencing the course of warfare. It has also impacted comparative political systems by affecting elections.

From another perspective, political issues such as discrimination, human rights, and democracy are also beginning to be affected by developments in artificial intelligence. There are political challenges associated with AI; it will raise several political issues related to justice, discrimination, democracy, and censorship. Technology undoubtedly has an impact, and a new form of power—artificial power—may emerge. AI is fundamentally political, addressing numerous political topics that have been and will continue to be affected by it, such as inequality, democracy, power, and post-humanism.

In the realm of justice, for example, modern AI programs are expected to influence legal proceedings, potentially leading to bias and discrimination. From a freedom's perspective, there are concerns about the increasing use of AI programs to monitor individuals' right to privacy. And from an environmental rights perspective, the significant energy consumption associated with data storage could have a negative impact on the environment, as could the negative effects of AI on what is known as electronic waste (UN Environmental Programme, 2025).

7. POSITIVE AND NEGATIVE IMPACTS OF ARTIFICIAL INTELLIGENCE ON THE POLITICAL REALM

Artificial intelligence (AI) has both positive and negative impacts on the political sphere. AI has become a reality in our lives today and can greatly benefit humanity by advancing scientific knowledge, improving medical care, and positively influencing political decision-making. However, it can also negatively impact issues such as human autonomy, intellectual property rights, and individual privacy.

Nevertheless, AI cannot be dismissed due to its drawbacks; it is now a reality and cannot be dispensed with. Therefore, we must consider maximizing its benefits and minimizing its harms in the political sphere, just as we do in the health, education, and cultural sectors.

8. ARTIFICIAL INTELLIGENCE AND POLITICAL DECISION MAKING

Artificial intelligence (AI) can assist political leaders in decision-making processes. Many AI programs are designed to reduce uncertainty surrounding decision outcomes, contribute to prediction, and support decision-makers by enhancing their insights and facilitating their decisions. The widespread use of AI and machine learning, along with the development of AI programs such as ChatGPT, DeepSeek, and Copilot, will significantly impact political decision-making globally.

Furthermore, AI algorithms can alter a fundamental aspect of democratic governance during policy implementation, specifically how key decisions affecting citizens' lives are made through the use of modern AI platforms and programs. Therefore, it is essential that the development and deployment of AI systems reflect public values and preferences. Governments and technology companies are also developing initiatives that involve citizens in shaping governance rules using AI, thereby impacting political participation (Berlin Social Science Center (WZB), 2021).

Moreover, some studies have indicated that machine learning algorithms can make better policy decisions than humans. In an age of information abundance and technological innovation, AI-driven decisions will be faster, more accurate, and are expected to be more beneficial to society. Many researchers have suggested replacing traditional politics with these AI-based approaches (Yotam Margalit and Shir Raviv (2023).

9. ARTIFICIAL INTELLIGENCE AND WARS

States now employ cutting-edge technologies in their wars, including artificial intelligence (AI) programs, to enhance war-related decision-making. AI has a significant impact on modern warfare. It has become a key weapon in the arms race, influencing military dynamics among major powers in the 21st century. Therefore, new AI-based weapons should be examined from the perspectives of ethics, international humanitarian law, and the arms race. Some studies focus on adopting theories of technological determinism and technological dependence to analyze the impact of technological advancements on weapons use, while also examining the ethical implications of these weapons to protect human rights in areas of armed conflict. There is no doubt that there is an arms race between major countries in the field of weapons based on artificial intelligence, which may threaten international peace and security (Osimen, 2024).

Undoubtedly there is a close relationship between artificial intelligence and the field of security studies, starting with discussions about the spread of disinformation and surveillance technology. Countries are now very interested in using artificial intelligence to enhance their military capabilities and to apply new AI technologies in defense and security, for example in cyber deterrence, surveillance, and logistics.

10. ARTIFICIAL INTELLIGENCE AND DEMOCRACY

Modern technology can impact democracy. When misinformation is spread during elections, it affects democratic representation, limits democratic accountability, and erodes political and social trust. New threats related to the misuse of artificial intelligence platforms have also emerged. Just one month after the invention of ChatGPT, the AI chatbot platform had nearly 100 million monthly users, making it the fastest-growing platform in history and the most widely used.

However, AI platforms can also provide an opportunity for actors to spread misinformation or manipulate information to mislead specific groups within society. Furthermore, it can be difficult for social media users to distinguish between information created by humans and information generated by social media platforms (Kreps and Kriner, 2023).

11. ARTIFICIAL INTELLIGENCE AND JUSTICE

The question of justice has preoccupied political thinkers throughout history. Thinkers have viewed justice from various perspectives; some have focused on distributive justice, corrective justice, procedural justice, political justice, and social justice. Among the most prominent writings of political thinkers in the Greek era that centered on justice is Plato's "Republic," and this theme was later reflected in the writings of Aristotle and other Western and Arab thinkers throughout different periods.

With the proliferation of modern artificial intelligence programs, it is expected that they will impact justice processes, addressing bias and discrimination. AI is anticipated to help replace human decision-making, including in courts. It can be used in judicial investigations by expediting legal proceedings and reducing the rate of human error.

Regarding the issue of bias, numerous studies have confirmed that artificial intelligence programs can be biased against certain groups within society, such as women. This is because AI programs mimic human intelligence, thus transferring and reproducing human biases and stereotypes. However, some studies have indicated that AI can analyze large amounts of data on the income gap between men and women through the Glass Door program, which highlighted differences in income based on gender. Programs like BSAFE (Be Safe) provide mechanisms to protect women, and the Canadian program Bolter.ai offers support to survivors of violence and harassment (UN Women, 2025).

12. ARTIFICIAL INTELLIGENCE AND TRANSFORMING THE NATURE OF DIPLOMACY

Diplomacy is the main, but not the only instrument of foreign policy that is determined by leaders of states. Unlike foreign policy, which is proclaimed publicly, diplomatic activities have been carried out and are mostly confidential or secret. The political leaders of sovereign states, who define foreign policy, pursue what they consider to be a national interest.

The etymology of "Diplomacy" comes from the ancient Greek word for diplomacy, consisting of "diplo", which means "folded in half" and suffix „ma", which means "object" which was later developed to the 18th-century French term diplomate ("diplomat" or "diplomatist"), based on the ancient Greek diplōma, which roughly means "an object folded in two".

Diplomacy consists of different means such as negotiations which is an essential means of diplomacy; their role is, among other things, to prevent and resolve conflicts between states or non-state actors and to initiate cooperation (Polkowska, 2020).

Diplomacy is very controversial term and that's why we have various trends in defining it. Some defined it as "The art of international negotiations", or "The tool by which each state tries to achieve its purposes",

“The means by which we can solve peacefully international disputes”. Diplomacy can also be defined as the management of relations between independent states by the process of negotiations.

Historically, diplomacy has arisen a very important question, which is *“Is diplomacy a science? or art? or both?”* The first group of scholars mentioned that “Diplomacy is Science”. They justified their opinion by saying that even if diplomacy was the art of negotiation, this art shall be based on studied theories, principles and not only skills. The second group of scholars said that “Diplomacy is Art”, This school focuses on the personal skills and intelligence. These natural skills should be found in the person who is ambitious to be in the diplomatic field.

The third group emphasized that “Diplomacy is both Art & Science”. This school is based upon compromise. For them, theories must be well-known and studied as well as the personal skills of how to deal with others in the right way (Siracusa, 2010).

However, it is difficult to get a general rule to diplomacy, sometimes diplomacy depends on the situation. There are situations in which you find that you need to recall what you have studied, especially in terms of interpreting treaties.

13. ARTIFICIAL INTELLIGENCE DIPLOMACY AND THE LANDSCAPE OF DIPLOMACY

In our fast-evolving world, the landscape of diplomacy is experiencing a groundbreaking shift. Picture ambassadors leveraging artificial intelligence (AI) to scrutinize countless social media messages in real time, with crisis responses informed by predictive analytics, and intricate negotiations improved by extraordinary data-driven insights. This is not a glimpse into the future; it is diplomacy as we know it today, transformed by AI.

Drawing from over two decades of experience in blending technology with foreign affairs, Donald Kilburg, a former U.S. diplomat, illustrates how AI is transforming diplomatic interaction, crisis resolution, and public diplomacy. AI has a capability to enhance the efficacy of diplomatic missions worldwide, from improving communication tactics to streamlining consular services (Kilburg, 2026).

For centuries, power was defined by territory, armies, and economic might. Today, a new element is paramount: data and the intelligence used to process it. Artificial intelligence diplomacy refers to how countries manage their international relationships regarding artificial intelligence. It’s the whole range of activities nations use to deal with the challenges and opportunities presented by Artificial Intelligence. AI can be used as a tool in diplomatic negotiations and diplomatic practice, also AI as a topic for diplomatic negotiations. In addition to that, AI can be seen as an element shaping the environment in which diplomacy is practiced. Artificial intelligence enables rapid data processing, predictive analytics, and real-time decision support. These present opportunities for enhancing a variety of diplomatic functions, including crisis response, conflict prevention, and conflict resolution.

To shed light on AI as a tool in state diplomacy, we can elaborate on the EU Experience. Artificial Intelligence (AI) has become widely used a tool of power politics, and an element of state diplomacy. AI impacts the European Union's geopolitical power and its relationship with other countries. possible scenarios for how AI may change the international balance of power and recommends ways for the EU and its Member States to respond (European Union, 2021). It is predicted that Artificial intelligence applications will enhance decision-making to improving global communication. And it AI empower state leaders to address complex challenges. In addition, it has the potential of strengthening international partnerships, and promote peace and prosperity.

A report issued by the U.S. department of State on using AI as a tool in diplomacy mentioned that Artificial intelligence is better at analyzing data, anticipating trends, responding to global issues with precision and agility, in addition to that it is committed to innovation. (U.S. Department of State, 2026).

Also, the Japanese government initiated the The Hiroshima AI Process was launched in May 2023, following the Leaders' direction at the G7 Hiroshima Summit, to tackle using AI in diplomacy in what they called international governance of generative AI (Ministry of Foreign Affairs of Japan, 2026).

14. AI'S POTENTIAL FOR THE EFFECTIVENESS OF DIPLOMATIC MISSIONS ACROSS THE GLOBE

AI driven diplomacy is vital in the world nowadays despite its cons. There is no doubt intersection between technology and international relations. Technology will impact how diplomatic missions function. Diplomatic representatives are the normal channel of communication between the governments of different states. The diplomat has a certain role which is the exposition of his country's views and the dissemination of information about his own country.

The purpose of diplomacy is to strengthen the state; nation or organization it serves. It aims for maximum benefit without the risks and costs of using force (Harishwar Dayal, 1956). Consular missions were temporary didn't take- in the beginning- the form of a mission. Gradually, transactions increased even more and the number of persons involved also increased. As a result, consular offices staying in a permanent way in other states started to show up and carried out consular services. In old times, missions were only sent to other states if necessary to promote relations or discuss a crisis and then they return back home when they finish their job. Any diplomatic mission has certain tasks, representation, negotiation, collecting information and protection of the interest of the sending state in the receiving state. Basically, the diplomatic agent is supposed to be the watching eye of the sending state in the receiving state, that's why he shall be conscious of whatever going on in the receiving state and aware of his country's plans and future foreign policies towards the receiving state.

Nowadays, besides being a basic job, the technology of communication has made it a mutual function that other partners can share it with the diplomatic agent. Technology has led to changes in the way

diplomats gather information and no doubt that artificial intelligence will change the methods of communication and data collection.

15. ADVANTAGES OF USING ARTIFICIAL INTELLIGENCE APPLICATIONS IN DIPLOMACY

Artificial intelligence applications can be used in writing speeches, analyzing videos of meetings, creating consular emails, and also in simulations of negotiation scenarios for example (Slunkin, 2025). Studies emphasize that the use of more artificial intelligence tools in global politics will have a positive impact on conflict resolution and will thus lead to more management of conflicts using peaceful methods.

To aid political leaders in their decision-making processes, a number artificial intelligence tools have been designed to decrease existing uncertainties and to support decision makers and enhance their insights to facilitate their decisions in both domestic politics and international relations. The extensive use of artificial intelligence and machine learning along the emergence of different artificial intelligence applications such as Chat GPT, Deep seek, Copilot, AI Arbitrator, Dispute resolution AI has led to a change in political decision-making processes worldwide and is likely to have a critical effect in the upcoming years. For example, Natural language processing (NLP) can allow mediators to use a specific tone that can help reach agreements and conducting negotiations with people using tact and mutual respect.

Furthermore, the United States government is considering the impact of artificial intelligence on public diplomacy, this is through introducing a number of institutional changes such as expanding training programs to help diplomats understand not just how to use AI tools, but how to think critically about AI, including its limitations, biases, and appropriate applications. In addition to investing in AI for audience understanding. Also from the advantages is creation and operational efficiency, but for “scaling up listening”, using AI to better understand foreign audiences and their concerns. (U.S. Department of State, 2026).

16. DISADVANTAGES OF USING ARTIFICIAL INTELLIGENCE APPLICATIONS IN DIPLOMACY

Artificial intelligence applications can reinforce their users. AI's misuse can infringe on diplomacy by facilitating arbitrary surveillance, enabling censorship and control of the information realm, or by entrenching bias and discrimination. It is feared that artificial intelligence (AI) technology will make humans unemployed in the future. Thus, from the disadvantages also include encouraging human laziness, and job displacement. So diplomatic missions and foreign offices can be subject to downsizing, a number of diplomats can become unemployed or the call for new diplomats can decrease. From the disadvantages of Artificial intelligence applications is disinformation and deep fakes, AI Hallucinations, encouraging human laziness, and job displacement, surveillance, infringement on human liberties, censorship and privacy, infringement upon intellectual property rights that why there are a lot of AI copyrights law suits.

In addition to that, using autonomous weapons in wars can pave a way for the lack of accountability and loss of human control over the use of force in armed conflict risks jeopardizing the protections for both combatants and civilians. This raises fundamental ethical concerns by delegating life and death decisions to machines, which diminishes both the moral agency of the users and the human dignity of those against whom force is used. The biggest risk of using AI in mediation is the possibility that it will introduce errors into the process.

One of the risks too that artificial intelligence applications sometimes produce strange hallucinations. With chat bots in their infancy, the risk that they will deliver inaccurate or even harmful mediation advice is real (Shonk, 2026). There are also ethical issues of using artificial intelligence in diplomacy, technology has transformed economies and societies, has redistributed (military) power among states, has empowered new actors, and shaped international relations. Automated processes may lack the humanitarian sense needed in delicate negotiations on one hand. On the other hand, there are fundamental ethical questions related to the role of human oversight in AI-driven diplomacy.

Moreover, there are some security concerns of using Artificial intelligence applications in diplomacy, that's why a number of states are competing to create their own artificial intelligence applications such as China that created a number of chat bots such as deep seek. Other countries such as Italy, Taiwan, Australia, and South Korea, have banned access to this application on official government devices due to national security concerns (Brock and Kumar, 2025).

CONCLUSION

Artificial Intelligence applications can be used as a tool for deterrence in international politics. Therefore, States are contesting over the usage of Artificial Intelligence applications. The use of artificial intelligence (AI) has become increasingly prevalent and influential, despite being a human invention. Many politicians worldwide have highlighted the crucial and potentially dangerous nature of AI applications. Russian President Vladimir Putin stated in 2017 that the nation leading the way in AI development will dominate the world. AI is the future of all nations, not just Russia (Gigova, 2017). Currently, countries are competing to develop AI applications. China has created several, most notably Deep Seek. Countries around the world are vying to acquire AI applications and the vast databases generated by these applications. Although the United States has the most AI applications in the world, countries like China have succeeded in narrowing the gap with the US in developing AI applications (Wei, 2025).

Undoubtedly, the rapid advancements in artificial intelligence (AI) raise numerous issues. AI has both advantages and disadvantages on politics and thus diplomacy. On the positive side, it can help protect human rights, promote democracy, and strengthen the rule of law. On the other hand, it also poses significant threats through its potential use in discrimination against certain groups in society, influencing the electoral process, violating intellectual property rights, infringing upon human dignity, autonomy, and

individual rights, breaching privacy, accessing individuals' personal information, impacting the labor market and employment rights, and addressing the challenges faced by developing countries in accessing and equitably utilizing this modern technology.

Furthermore, humans must retain the final decision-making power after the application of artificial intelligence (AI) – a concept known as the "human in the loop" approach – to prevent machines from taking complete control. AI is a modern technological advancement and, simultaneously, a political actor that will influence political events both positively and negatively. For nations, possessing AI technology can be a source of strength if used optimally, but it can also become a source of weakness, even vulnerability, if misused. Therefore, AI is a double-edged sword. While it can benefit individuals, it can also cause significant harm.

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FEMICIDE: COMPARATIVE ANALYSIS OF NATIONAL AND INTERNATIONAL LEGAL STANDARDS

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Abstract

Femicide represents the most severe and fatal manifestation of gender-based violence against women, involving the killing of a woman because of her gender. In recent years, this phenomenon has become increasingly visible in European societies, including North Macedonia, highlighting the need for a deeper analysis of its causes, legal framework, and societal responses. This research aims to examine the legal mechanisms for addressing femicide, as well as citizens' perceptions regarding its causes and prevention. The study is based on a quantitative method, conducted through a survey of 144 respondents. The findings indicate a significant level of distrust in institutions, along with a perception that existing laws are insufficiently effective in preventing femicide. Furthermore, respondents identify domestic violence, patriarchal norms, and inadequate institutional responses as key contributing factors. These findings highlight the need for stronger institutional accountability and more effective preventive policies.

Keywords: femicide, gender-based violence, criminal law, prevention, North Macedonia, women's rights.

INTRODUCTION

The aim of this paper is to analyze the phenomenon of femicide from both legal and societal perspectives, with particular emphasis on the need for its clear regulation within national legislation and for improving the institutional response to this phenomenon.

In North Macedonia, the issue of femicide has become increasingly prominent in both public and academic discourse, particularly following several cases that provoked strong public reactions and initiated a broad societal debate. These events have raised questions regarding the effectiveness of institutional protection for victims of gender-based violence, as well as the adequacy of the existing legal framework and the mechanisms for the prevention and sanctioning of such acts (OSCE, 2019). Violence against women constitutes a serious social phenomenon that directly affects human rights, gender equality, and the principles of the rule of law (National Network against Violence against Women and Domestic Violence, n.d.). One of the most extreme and severe forms of this violence is femicide, the killing of a woman motivated by her gender or as the ultimate consequence of gender-based violence (Radford & Russell, 1992, p. 3).

1. LITERATURE REVIEW

The phenomenon of femicide has attracted increasing attention within the fields of criminal law, criminology, sociology, feminist studies, and human rights. Academic literature generally defines femicide as the killing of women because they are women, emphasizing that such acts are not isolated incidents of interpersonal violence but rather manifestations of structural gender inequality and patriarchal social relations (Radford & Russell, 1992). The concept was first introduced into academic discourse by Diana Russell, who described femicide as “the killing of females by males because they are female” and connected it directly to broader systems of misogyny, domination, and violence against women (Radford & Russell, 1992). Together with Jill Radford, Russell contributed significantly to establishing femicide as a distinct analytical and criminological category rather than merely a form of homicide. Their work emphasized that gender-based killings emerge from unequal power relations embedded within patriarchal societies.

Feminist legal and sociological scholarship further developed the understanding of femicide as a consequence of systemic discrimination against women. Within this framework, violence against women is interpreted not only as an individual criminal act but also as a social mechanism of control that reinforces women’s subordinate position in society. Studies indicate that femicide is

frequently preceded by prolonged domestic violence, threats, coercive control, and institutional failures to adequately protect victims (UNODC, 2018). Research conducted by the United Nations Office on Drugs and Crime demonstrates that a significant proportion of women killed worldwide are murdered by intimate partners or family members, highlighting the close connection between domestic violence and femicide (UNODC, 2018). A major contribution to the theoretical expansion of the concept was made by Marcela Lagarde y de los Ríos, who introduced the term femicide (*feminicidio*). Lagarde argued that killings of women should not be understood solely as individual criminal acts, but also as outcomes of institutional tolerance, impunity, and state failure to prevent gender-based violence (Lusvardi, 2023). International organizations and human rights bodies have increasingly recognized femicide as a serious violation of human rights. The European Institute for Gender Equality defines femicide as the killing of women and girls because of their gender and stresses the importance of developing unified indicators for monitoring and prevention (European Institute for Gender Equality, 2017). Similarly, the Convention on the Elimination of all forms of Discrimination against Women recognizes gender-based violence against women as a form of discrimination that impairs the enjoyment of fundamental human rights and freedoms (United Nations, 1979). General Recommendation No. 35 of the CEDAW Committee further emphasizes the obligation of states to exercise due diligence in preventing, investigating, prosecuting, and punishing acts of gender-based violence (CEDAW Committee, 2017).

Comparative legal scholarship demonstrates that countries approach femicide differently within their criminal justice systems. In Latin American states such as Mexico and Brazil, femicide has been explicitly criminalized either as a separate criminal offense or as an aggravated form of homicide motivated by gender-based violence (Brazil, Federal Law No.13.104/2015). More recently, several European countries have also introduced specific legal provisions addressing femicide.

Existing literature in the Balkan region and North Macedonia remains relatively limited compared to broader international scholarship. However, available regional studies indicate that patriarchal norms, economic dependence, inadequate institutional coordination, and insufficient victim protection mechanisms remain significant factors contributing to violence against women (OSCE, 2019). Reports by the Organization for Security and Co-operation in Europe (2019) show that many women in North Macedonia have experienced psychological, physical, or sexual violence, while trust in institutional protection mechanisms remains low. Despite growing public

awareness, academic research specifically focused on femicide within the Macedonian legal context is still underdeveloped, particularly regarding public perceptions and the adequacy of existing legal responses.

Accordingly, this research seeks to contribute to the existing literature by examining femicide from both legal and societal perspectives in the context of North Macedonia. By combining normative legal analysis with empirical data on public perceptions, the study aims to provide a broader understanding of institutional shortcomings, societal attitudes, and potential mechanisms for prevention and legal reform.

2. ORIGIN AND EVOLUTION OF THE CONCEPT OF *FEMICIDE*

The concept of femicide has been used in academic literature for several decades and was first introduced by Diana Russell in the 1970s. Femicide represents the most extreme form of gender-based violence, motivated by a desire for control and domination over women (Radford Russell, 1992).³⁹ Within academic discourse, femicide is defined as a form of homicide that emerges from structural inequalities between men and women, as well as from the existence of patriarchal social norms (European Institute for Gender Equality, 2017).

The phenomenon of femicide is deeply embedded in patriarchal structures of society and, accordingly, constitutes an extreme form of male violence. Diana Russell argues that femicide has existed since the emergence of patriarchy itself (Radford & Russell, 1992). The strength of patriarchal ideology lies in its capacity to control women, punish those who resist violence, and blame women for “provoking” violence (Radford & Russell, 1992, p. xiii). Femicide represents a complex social phenomenon with deep historical roots in patriarchal systems and cannot be treated as an exclusively contemporary occurrence. At its core, femicide constitutes a radical manifestation of discrimination, misogyny, and systemic hatred toward women, in which the victim’s gender is the primary motive for the killing.

Despite increased awareness and institutional efforts toward prevention, contemporary societies still exhibit narratives that indirectly justify violence against women. Such discourses, expressed

³⁹ She was actively involved in the feminist struggle against male violence, and her concern about femicide also had a deeply personal dimension. On the night of October 29, 1981, her close friend Mary Bristow was murdered in her home in Winchester by her former partner, Peter Wood, who had previously harassed and threatened her. According to his statement, the reason was Mary’s decision to refuse to resume a relationship with him. It is important to note that Diana and Mary Bristow were founding members of the Women’s Liberation Group in Winchester, which actively opposed male violence. They recognized the power of patriarchal ideology that seeks to control women, punish those who resist violence, blame women for “provoking” it, and enable men to remain unpunished even after killing their wives. After the death of her closest friend, she moved to London and during the 1980s was active in the Central London organization WAVAW (Women Against Violence Against Women).

through statements like “she provoked” or “she dressed provocatively,” represent a form of victim-blaming and reflect deeply ingrained cultures of gender inequality and tolerance of violence. These attitudes not only relativize the criminal act but also contribute to its social normalization, thereby hindering effective prevention and the proper sanctioning of femicide.

A significant contribution to the understanding of femicide has been made by Mexican activist and anthropologist Marcela Lagarde y de los Ríos. During the 1990s, many women were killed in Mexico, particularly in Ciudad Juárez. Despite activists’ demands for attention, the government largely failed to adequately investigate these crimes, leaving many cases ignored. Lagarde expanded the concept through the term *feminicide* (*feminicidio*) to emphasize that these killings are not random acts, but rather the result of deep-rooted social issues such as sexism, inequality, and governmental neglect (Lusvardi, 2003).

Femicide refers to the killing of a woman because of her gender, with the primary focus on the act of killing itself. In contrast, feminicide is a concept developed by Marcela Lagarde y de los Ríos, which situates these killings within a broader context as a result of systemic gender-based violence, cultural norms, and the failure of the state to prevent or punish violence against women.

Femicide is commonly classified into three types: intimate femicide, committed by a current or former partner; familial femicide, committed by a family member; and social or structural femicide, which arises from broader socio-cultural factors (Lagarde, 2006).

Research shows that in the majority of cases there is a prior history of domestic violence, threats, or controlling behavior, which institutions often fail to recognize in a timely manner (UNODC, 2018).

3. NATIONAL LEGAL FRAMEWORK

In many countries, including North Macedonia, killings of women motivated by gender-based reasons are still treated as ordinary homicides, without taking into account the specific context of gender-based violence. As a result, there is a growing need to develop more effective, specifically tailored, and systemic mechanisms for prevention, sanctioning, and protection.

In some countries, steps have already been taken in that direction through the introduction of specific provisions in criminal legislation, whereby femicide is distinguished from other forms of homicide.

In the Republic of North Macedonia, femicide is still not explicitly defined in criminal legislation. Although provisions on homicide and domestic violence exist, there is a lack of a clear legal qualification that would recognize the gender-motivated nature of these acts.

While killings of women have traditionally been treated within the framework of general criminal offenses against life and bodily integrity, contemporary research indicates that a significant number of these killings are directly linked to gender inequality, patriarchal social structures, and prolonged violence against women. Femicide is thus examined as a complex phenomenon arising from gender-based violence and structural socio-cultural factors (Radford & Russell, 1992, pp. 3-5). The theoretical framework of this research is grounded in a multidisciplinary approach, integrating insights from the fields of criminal law, criminology, sociology, gender studies, and human rights. This approach enables the analysis of femicide not only as a criminal offense, but also as a social phenomenon resulting from patriarchal structures and gender inequality (Radford & Russell, 1992).

The legal framework refers to the existing statutory regulation in the Republic of North Macedonia. The Law on Criminal Procedure of the Republic of North Macedonia provides fundamental procedural mechanisms for the recording, investigation, and prosecution of violent acts, including physical and psychological violence against women (Law on Criminal Procedure, 2010).

The Criminal Code of the Republic of North Macedonia regulates homicide and its qualified forms, but it does not recognize femicide as a distinct criminal offense (Criminal Code of the Republic of North Macedonia, 2023). This deficiency complicates the statistical recording, classification, and analysis of such cases, as well as the effective sanctioning of perpetrators, thereby limiting the preventive and protective functions of the legal system.

In this regard, international standards, including the recommendations of the OSCE, point to the need to harmonize domestic legislation with European and international practices for the protection of women (OSCE, 2019, pp. 45-47).

The application of the comparative method enables a comparison with countries that recognize femicide as a distinct criminal category, thereby providing a basis for proposing legislative solutions and improving institutional mechanisms in North Macedonia. The combination of theoretical and normative approaches allows for a comprehensive understanding of the

phenomenon and the development of strategies for prevention, victim protection, and the sanctioning of perpetrators.

Although many states still do not have a separate criminal offense of *femicide*, legal theory increasingly emphasizes the need to recognize gender-based motivation as an aggravating circumstance in the sentencing of killings of women (European Institute for Gender Equality, 2022).

Despite existing legal provisions on homicide and violence against women, North Macedonia still faces significant legal and institutional shortcomings in addressing femicide. The most significant legal deficiencies are:

- The absence of a unified definition of femicide in national legislation, which complicates its recording, classification, and prosecution.
- Institutional mechanisms for victim protection are limited and often fail to respond in a timely manner to warning signs of prolonged gender-based violence.
- Insufficient coordination among the police, courts, and social work centers, which further reduces the effectiveness of sanctioning perpetrators.

In order to overcome these shortcomings, several key measures are proposed:

- The normative recognition of femicide as a distinct criminal offense or as a qualified form of homicide;
- The introduction of a mechanism for the systematic review of femicide cases, which would identify institutional failures and enable preventive interventions;
- Strengthening institutional coordination and ensuring prompt and effective access to protection for victims;
- The adoption of international and comparative practices from countries that have already incorporated the concept of femicide into their legislation.

4. INTERNATIONAL LEGAL FRAMEWORK AND STANDARD

Femicide is recognized as a serious violation of human rights and as an indicator of institutional failure to provide adequate protection to victims of violence. International standards encompass significant mechanisms for combating violence against women. At the European level, particularly important is the Istanbul Convention (Council of Europe Convention on preventing and combating violence against women and domestic violence, 2011).

This Convention obliges states to take measures based on prevention, the protection of victims, and the effective prosecution of perpetrators (*Explanatory Report to the Istanbul Convention, 2011*).

Additionally, the most significant document in this field is the Convention on the Elimination of All Forms of Discrimination against Women, which obliges states to take measures to prevent and sanction gender-based violence (Convention on the elimination of all forms of discrimination against women, 1979). In particular, General Recommendation No. 35 of the CEDAW Committee recognizes gender-based violence as a form of discrimination and emphasizes that states have an obligation to ensure effective legal protection for victims (General Recommendation No. 35 on gender-based violence against women, 2017).

5. COMPARATIVE ANALYSIS OF LEGAL FRAMEWORKS ON FEMICIDE

The comparative review of national legal frameworks shows significant differences in how femicide is recognized and sanctioned.

Italy has recently recognized femicide as a separate criminal offense within its criminal justice system. Law No. 181/2025 introduced a new Article 577-bis into the Italian Criminal Code, defining femicide as the killing of a woman motivated by gender-based hatred, discrimination, control, or domination over women.⁴⁰ The law prescribes the most severe penalty - life imprisonment, thereby treating femicide as an especially serious form of homicide (Centro di Ateneo per i Diritti Umani, 2025). This step represents an important example in Europe, as relatively few European states have criminalized femicide as a distinct offense.

In Croatia, the phenomenon of femicide is formally recognized through Article 111a of the Criminal Code (OG 125/11, 36/24), which defines the category of “serious murder of a female person” (*teško ubojstvo ženske osobe*). According to this provision, anyone who commits a gender-based killing of a woman is punishable by imprisonment of at least ten years or by life imprisonment. Article 111a, paragraph 2 of the Croatian Criminal Code stipulates that specific circumstances characterizing femicide should be taken into account, such as:

- The offense being committed against a close person;
- The victim having previously been abused by the perpetrator;
- The victim being a vulnerable person or in a relationship of subordination or dependence;

⁴⁰ Adopted on 25 November 2025 and entering into force on 17 December 2025.

- The offense being committed in circumstances of sexual violence.

The Criminal Code of the Republic of Croatia (2025) recognizes femicide as a distinct criminal offense, separate from general forms of homicide.

In Brazil, femicide is defined under Federal Law No. 13.104/2015, known as the “Lei do Feminicídio,” which amended the Criminal Code (Decree-Law No. 2.848/1940)⁴¹ to include femicide as an aggravating circumstance in homicide cases when the motive involves gender-based violence against women (Brazil, 2015). The legal framework also provides for increased penalties if femicide is committed under specific circumstances, such as:

- During pregnancy or within three months after childbirth;
- Against women under 14 years of age, over 60 years of age, or with disabilities;
- In the presence of the victim’s children or close relatives.

In addition, femicide is classified as a *crime hediondo*, which further strengthens its penal consequences within the Brazilian legal system.

These examples provide insight into the different national approaches to the recognition and sanctioning of femicide.

6. RESEARCH METHODOLOGY

This study represents an empirical investigation employing a quantitative approach. The aim of the research was to examine public perceptions regarding femicide, the institutional response, and potential mechanisms for prevention. Data were collected through a structured online questionnaire consisting of 20 questions. The questionnaire includes demographic questions, multiple-choice items, statements formulated according to a Likert scale, and open-ended questions.

The instrument was developed using Google Forms and distributed electronically. A total of 144 respondents participated in the study. Participation was voluntary and anonymous. Of the total number of respondents, 82.6% were women (119), 15.3% were men (22), while 2.1% (3) did not respond to the question regarding gender.

⁴¹ The law entered into force on 9 March 2015 and represents one of the key steps in the Brazilian legal system toward preventing extreme violence against women.

Prior to participation, respondents were informed about the purpose and significance of the research, the voluntary nature of their participation, as well as the guaranteed anonymity and confidentiality of their responses, in accordance with the ethical principles of scientific research. The questionnaire was available in three languages: Albanian, Macedonian, and English.

7. RESEARCH RESULTS

This section presents the results obtained from the conducted survey research. The analysis is based on the responses of 144 participants who took part in the survey consisting of 20 questions. The results are presented through tables and graphical displays, specifically showing frequencies and percentage distributions of responses, in order to provide a clearer and more systematic presentation of the collected data.

7.1 Demographic characteristics of the respondents

In order to better understand the structure of the sample, the demographic characteristics of the respondents are presented below, including gender, age, level of education, and employment status.

Table 1. Demographic characteristics of the respondents

Characteristic	Category	n	%
Gender	Female	119	82.6
	Male	22	15.3
	No response	3	2.1
Age	18-29	54	37.5
	30-44	58	40.3
	45-59	29	20.1
	60+	3	2.1
Education	Primary	2	1.4
	Secondary	11	7.6
	Undergraduate	77	53.5
	Postgraduate	33	22.9
	Doctoral studies	21	14.6
Employment status	Employed	107	74.3
	Unemployed	21	14.6
	Student	14	9.70
	Retired	2	1.4

Source: Author's calculations based on survey data.

This table presents the demographic characteristics of the respondents. Out of a total of 144 participants, the majority are women (82.6%), while 15.3% are men. In terms of age, most respondents belong to the 30–44 age group (40.3%), followed by those aged 18–29 (37.5%). Regarding education, more than half of the respondents have an undergraduate degree (53.5%), while 22.9% hold a postgraduate degree. The smallest percentage is observed among respondents with primary education (1.4%). In terms of employment status, the majority of respondents are employed (74.3%).

7.2 Perception of femicide

Table 2. Awareness of the concept of femicide

Response	Frequency	Percentage
Yes	105	72.9
No	23	16
Not sure	16	11
Total	144	100

Source: Author's calculations based on survey data.

It can be observed that 72.9% of respondents stated that they had heard of the concept of femicide, while 16% were not familiar with the term.

Table 3. Main causes leading to femicide

Cause	n	%
Gender inequality	64	44.4
Domestic violence	77	53.5
Patriarchal mentality	95	66
Mental health-related factors	73	50.7
Lack of education	61	42.4
Economic stress	35	24.3
Alcohol or drug abuse	59	41
Weak law enforcement	65	45.1
Cultural or religious beliefs	23	16
Other	9	6.3

Source: Author's calculations based on survey data.

Table 3 presents the perceived causes of femicide according to the respondents' views. The most frequently identified cause is patriarchal mentality (66%), followed by domestic violence (53.5%)

and mental health-related factors (50.7%). A smaller proportion of respondents pointed to cultural or religious beliefs (16%), while a small number indicated other causes.

7.3 Societal attitudes and reporting

Table 4. The role of the media

Type of media	n	%
Television or radio	13	9
Social media	104	72.2
Newspapers or online news	9	6.3
Friends or family	10	6.9
I rarely hear about it	8	5.6
Total	144	100

Source: Author's calculations based on survey data.

This table presents respondents' views on how they obtain information about femicide cases. Social media is the dominant source of information on femicide (72.2%), while traditional media have a significantly smaller reach.

7.4 Institutions and laws

Table 5. Institutional protection of victims

Response	n	%
Not sufficient	68	47.2
Slightly sufficient	68	47.2
Sufficient	7	4.9
Very sufficient	1	0.7
Excellent	0	0
Total	144	100

Source: Author's calculations based on survey data.

With regard to the level of protection provided by institutions to victims, the analysis of the data indicates a predominantly low level of satisfaction among respondents. The vast majority (94.4%) are positioned within the categories of dissatisfaction or low satisfaction, while only a small proportion (5.6%) expresses a higher level of satisfaction. These findings suggest an overall low perception of institutional effectiveness within the surveyed population.

Table 6. Perception of the adequacy of existing legal solutions

Response	n	%
Yes	13	9
No	99	68.8
I don't know	32	22.2
Total	144	100

Source: Author's calculations based on survey data.

The results presented in this table indicate that a majority of respondents (68.8%) believe that existing legal solutions are not sufficient for effectively addressing femicide.

7.5 Prevention measures

From the analysis of the open-ended questions, it can be concluded that respondents propose several measures for preventing femicide, with the most frequently mentioned being stricter legal penalties, improved institutional coordination, raising public awareness education of young people, and stronger support for victims of violence.

Reducing femicide requires a systemic and coordinated approach through the implementation of concrete institutional measures. Key elements in this process include the timely and effective response of the police to every reported case of violence, as well as the urgent issuance of protective measures in order to prevent further escalation. In addition, it is essential to ensure safe and accessible shelters for women exposed to violence, along with stricter sanctions and consistent enforcement of legal regulations against perpetrators.

At the same time, an important role is also played by the continuous and mandatory training of police officers, public prosecutors, and judges on appropriate handling of cases of gender-based violence. These measures should be complemented by economic support for women in vulnerable situations, with the aim of strengthening their independence and safety. Furthermore, responsible media reporting represents an important factor as it should contribute to raising public awareness and avoid downplaying the seriousness of such criminal offenses.

7.6 Discussion

The findings of this research indicate that femicide is perceived by respondents not only as an individual criminal act, but also as a broader social and institutional problem closely connected to gender inequality, patriarchal norms, and insufficient institutional protection mechanisms. The results demonstrate a relatively high level of public awareness regarding the concept of femicide, as 72.9% of respondents stated that they were familiar with the term. This may be associated with increased media coverage of gender-based violence and the growing public debate surrounding recent femicide cases in North Macedonia.

The respondents identified patriarchal mentality (66%) as the primary factor contributing to femicide, followed by domestic violence (53.5%) and mental health-related issues (50.7%). These findings are consistent with existing academic literature, which emphasizes that femicide is deeply rooted in structural gender inequalities and social systems that normalize male domination and violence against women (Radford & Russell, 1992). Similarly, international organizations such as the United Nations Office on Drugs and Crime (UNODC, 2018) and the European Institute for Gender Equality (EIGE, 2017) have emphasized that gender-based killings are frequently preceded by prolonged domestic violence, coercive control, threats, and institutional failures to provide adequate protection.

A significant finding of the research is the low level of trust in institutional protection mechanisms. The majority of respondents evaluated institutional protection as either “not sufficient” or only “slightly sufficient”. These perceptions suggest that the public considers institutional responses to gender-based violence to be ineffective or inadequate. Such findings correspond with reports of the Organization for Security and Co-operation in Europe (OSCE, 2019), which indicate that many women in North Macedonia lack confidence in institutional support mechanisms and often hesitate to report violence because of fear, social stigma, or distrust in authorities.

The results further reveal that social media constitutes the primary source through which respondents receive information about femicide cases. This demonstrates the growing influence of digital platforms in shaping public awareness and societal attitudes regarding gender-based violence. However, it also raises concerns regarding sensationalist reporting, misinformation, and

the possible normalization of violence through media discourse. Responsible media reporting therefore represents an important element in the prevention of femicide and in promoting greater public awareness regarding violence against women.

Another important finding concerns the perception of existing legal solutions. A substantial majority of respondents believe that current legislation is insufficient for effectively addressing femicide. This reflects the broader academic and legal debate regarding the need for the explicit recognition of femicide within criminal legislation. Comparative legal analysis demonstrates that countries such as Croatia, Brazil, and Italy have already introduced specific legal mechanisms addressing femicide either as a separate criminal offense or as an aggravated form of homicide motivated by gender-based violence. Such legal recognition enables more precise statistical monitoring, stronger institutional accountability, and improved victim protection.

The research additionally highlights the importance of preventive and educational measures. Respondents emphasized stricter penalties, improved institutional coordination, public education, and stronger support systems for victims as essential mechanisms for reducing femicide. These findings support the view that criminal sanctions alone are insufficient and that a broader multisectoral approach is necessary. Effective prevention requires cooperation among legal institutions, educational systems, social services, healthcare professionals, civil society organizations, and the media.

Although this study contributes to the understanding of public perceptions regarding femicide in North Macedonia, certain limitations should be acknowledged. The sample predominantly consisted of female respondents, which may influence the overall perception of the phenomenon. In addition, the research relied on an online questionnaire distributed electronically, which may limit participation among individuals with restricted internet access. Despite these limitations, the findings provide valuable insight into societal attitudes toward femicide and highlight the urgent need for stronger institutional and legal responses.

8. RECOMMENDATIONS

Based on the findings of the research and the comparative legal analysis, several recommendations may be proposed for improving the prevention and sanctioning of femicide in the Republic of North Macedonia.

First, femicide should be explicitly recognized within national criminal legislation either as a distinct criminal offense or as a qualified form of homicide motivated by gender-based violence. Such legal recognition would contribute to clearer statistical monitoring, more effective prosecution, and greater institutional accountability.

Second, institutional coordination among the police, public prosecutors, courts, social work centers, and healthcare institutions should be strengthened. Timely exchange of information and coordinated responses are essential for identifying high-risk cases and preventing escalation of violence, and third, continuous and mandatory training should be provided for police officers, judges, prosecutors, and social workers regarding gender-based violence, victim protection, and risk assessment mechanisms.

Fourth, greater support mechanisms should be ensured for victims of violence, including accessible shelters, psychological assistance, legal aid, and economic support programs aimed at strengthening women's independence and safety. Fifth, educational and awareness campaigns should be implemented to challenge patriarchal norms, gender stereotypes, and the social tolerance of violence against women.

To sum it up, responsible media reporting should be encouraged in order to avoid sensationalism and victim-blaming narratives, while simultaneously promoting public awareness.

CONCLUSION

Femicide represents the most extreme form of gender-based violence, deeply rooted in patriarchal social structures and systemic gender inequalities. In the Republic of North Macedonia, although legal provisions addressing homicide and domestic violence exist, femicide has not yet been explicitly recognized as a distinct category of criminal offense.

The comparative analysis shows that in other countries, such as Italy, Croatia, and Brazil, femicide is formally criminalized either as an autonomous criminal offense or as an aggravating circumstance in homicide cases with specific aggravating factors. This allows for more effective victim protection and systematic data collection. These examples provide important guidance for the development of national legal solutions in North Macedonia.

The results of the empirical research indicate that the public has a moderate to high level of awareness of the concept of femicide, but that significant legal and institutional shortcomings persist, including low effectiveness of protective mechanisms, limited inter-institutional coordination, and insufficient implementation of existing legal provisions. Respondents identify patriarchal values, domestic violence, and mental health issues as the main causes of femicide, while also emphasizing the need for education, public awareness, and improved institutional support.

Accordingly, key recommendations include the normative recognition of femicide as a distinct criminal offense, the introduction of systematic case review mechanisms, strengthening institutional coordination, continuous training of public officials, access to safe shelters and economic support for victims, responsible media reporting, and the adoption of international and comparative best practices.

Different legal systems offer varying degrees of protection and penal severity, and the combination of national legislation, international standards, and public awareness is crucial for reducing femicide and strengthening gender-based justice.

In conclusion, femicide therefore represents not only a criminal justice issue, but also a broader social and human rights challenge that requires comprehensive legal reform, institutional accountability, and long-term societal transformation aimed at achieving substantive gender equality.

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