Assessing competitiveness and ensuring resilience of medical organizations in the healthcare system

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To cite this article:
Causan, C., Gorobievschi, S., Radu, G. (2026). Assessing competitiveness and ensuring resilience of medical organizations in the healthcare system. Romanian Journal of Economics, 62(1), 277-288.

Abstract. Objective: *In a global context of increasing climate, health, and economic pressures, there is a critical need to assess the resilience and competitiveness of medical institutions. This study evaluates the healthcare system of the Republic of Moldova with the primary objective of enhancing its resilience and competitiveness through an integrated approach that combines technology, strategic funding, and organizational performance measurement.* ***Method:*** *The research employs a mixed-methods approach, utilizing both qualitative and quantitative techniques. This includes an extensive literature review, statistical analysis, econometric modeling, and SWOT analysis. The study also leverages data from digital health tools, such as Electronic Health Records (EHR) systems, electronic databases, and specialized analytical platforms to evaluate reforms implemented between 2020 and 2023.* ***Results:*** *The findings demonstrate that the adoption of digital solutions and analytical tools significantly improves operational efficiency, transparency, and sustainability. The results indicate that these integrated measures have strengthened the resilience and performance of Moldova's healthcare institutions, specifically improving their capacity to address the challenges posed by the COVID-19 pandemic and subsequent 21st-century health crises.* ***Originality:*** *This study provides a novel integrated framework that bridges the gap between digitalization, investment, and resilience within a developing healthcare system. It offers a unique analysis of the impact of recent digital reforms (2020–2023) on organizational competitiveness, providing specific strategic recommendations for sustainable development that are tailored to the Moldovan context.*

Keywords: *health system, Republic of Moldova, digitalization, organizational competitiveness, resilience.*
JEL: *classification: A10, H 13, H 15, M10*

1. Introduction

Based on the authors' research, life expectancy represents one of the most relevant indicators of a population's overall health and simultaneously reflects the performance and sustainability of a national healthcare system (WHO, 2021). Globally, the COVID-19 pandemic caused a significant decline in life expectancy. According to WHO statistics (2024), between 2019 and 2021, global life expectancy dropped by 1.8 years, reaching 71.4 years - effectively erasing a decade of previous progress.

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The decline was unevenly distributed: in the Americas and Southeast Asia, the loss was nearly three years, while the Western Pacific region recorded a much smaller decrease. These differences highlight the dependence of population health on the resilience and adaptability of national healthcare systems.

Within the European Union, after pandemic-related declines, life expectancy recovered relatively quickly. By 2023, the EU average reached 81.5 years (78.9 for men and 84.2 for women), surpassing pre-pandemic levels from 2019 (Eurostat, 2024; INED, 2024). This recovery demonstrates the capacity of EU member states to implement effective health policies, mobilize financial and human resources, and integrate technological innovations into the medical field.

In the Republic of Moldova, the 2023 figures indicate an average life expectancy of 72.4 years (67.5 for men and 76.4 for women) (BNS, 2024). This modest increase follows the declines caused by the COVID-19 pandemic and the indirect effects of the war in Ukraine. However, the nearly nine-year gap compared to the EU average highlights persistent systemic challenges: unequal access to medical services, healthcare workforce migration, chronic underfunding, and outdated hospital infrastructure (Gorobievschi, 2014; Gorobievschi, 2020).

In the academic literature, it is emphasized that evaluating the quality of healthcare services should not be limited to clinical performance alone but must also consider managerial efficiency, organizational resilience, and adaptability to community needs (Gorobievschi, 2020). Operational management of human, financial, and technological resources becomes essential for reducing avoidable mortality, improving service quality, and ultimately increasing life expectancy.

The general objective of this paper is to evaluate the competitiveness and ensure the resilience of medical organizations in the Republic of Moldova through digitalization, healthcare investments, and improved organizational performance.

2. Literature review

In the specialized literature of recent decades, the transformation of health systems has been analyzed through the lens of interdependent factors that reinforce each other and influence both the performance of services and the overall health of the population. Digitalization, sustainable financing, a qualified workforce, and efficient institutional frameworks consistently emerge as major directions of reform. International studies (OECD, 2023; WHO, 2022) emphasize that success does not result from isolated actions in any of these areas, but rather from their integration into a coherent strategy. Thus, digital technologies can contribute to the personalization of treatment (Dumitrescu & Radu, 2021), medical prevention, and dynamic health monitoring (Popescu, 2020; Popa, 2023), but their effectiveness depends on the existence of institutional infrastructure and a workforce adapted to new clinical competencies (Ionescu & Marinescu, 2021). Digitalization accessibility is a key determinant for the effectiveness of modern medical services (Georgescu, Ionescu, & Marinescu, 2022), particularly when early interventions are integrated into digital health platforms (Vasilescu, 2019).

At the same time, financial resources remain an essential condition for the modernization of medical infrastructure and for reducing disparities in access to services. European reports (Rechel et al., 2020; European Commission, 2022a) show that countries which have successfully combined digitalization with predictable financing policies and solid institutional governance have achieved significant progress in terms of life expectancy and the perceived quality of services. These findings are further supported by comparative international indicators on health and quality of life (Eurostat, 2024; INED, 2024; WHO, Regional Office for Europe, 2024b; Numbeo, 2023), which highlight both convergence trends and the persistence of regional disparities. A distinct element is represented by the human resources in healthcare. WHO analyses (WHO, 2021; Biroul OMS Moldova, 2022) emphasize the importance of strengthening professional capacities, as well as adapting to new organizational paradigms based on interdisciplinarity (Filippov & Kuznetsova, 2012) and the integration of quality-of-life indicators into clinical practice (Smirnova, 2012; WHOQOL Group, 1998). To evaluate organizational performance from a patient-centric view, frameworks like the MOS 36-item short-form health survey (SF-36) provide standardized metrics for health outcomes (Ware & Sherbourne, 1992; Ware et al., 1993). At the same time, classical literature on physician–patient communication (Stewart,

1995) remains relevant, being complemented by contemporary research on the impact of digitalization on mental health (Petrescu & Lungu, 2019).

In the Republic of Moldova, national statistical reports and strategic documents (BNS, 2023; BNS, 2024; MS, 2023; GRM, 2023) confirm that structural vulnerabilities—chronic underfunding, medical staff migration, and the digital divide—require integrated public policies. The National Health Strategy 2023–2030 translates European and global objectives into the local context, promoting digitalization, prevention, and the strengthening of institutional resilience. This approach is aligned with the directions promoted by the WHO and the European Commission, which emphasize that the future of healthcare depends on the capacity of systems to respond to crises and to transform technological innovation into a benefit accessible to the entire population.

3. Methodology and data

This study employs a mixed-methods approach, combining qualitative and quantitative techniques to evaluate the interaction between patient–physician–institution relationships and their impact on the quality of medical services.

On the qualitative side, the research relies on literature reviews, interviews, and surveys designed to capture the perceptions and satisfaction levels of both patients and medical personnel.

On the quantitative side, the methodology integrates descriptive analyses, correlation studies, and multiple regression models aimed at identifying relationships between the degree of digitalization, levels of healthcare investment, and organizational performance in medical institutions.

The analysis includes the following key indicators:

- Digitalization & e-health: DESI scores, electronic health record adoption, access to digital healthcare services.
- Healthcare investments: share of GDP, per-patient expenditure, cost-efficiency.
- Organizational performance: patient satisfaction, treatment success rates, operational efficiency, and institutional resilience.
- Socio-demographic indicators: life expectancy, mortality rates, and overall public health index.

Data sources include WHO reports, Eurostat, DESI 2023 (European Commission, 2023), the Global Health Security Index, the Ministry of Health of the Republic of Moldova (MS), and relevant academic literature.

This approach links national health indicators—such as life expectancy, mortality, and public health indices—with how medical institutions are managed and adapted to current demands. Effective operational management thus becomes a key driver in transforming the healthcare system into one that is sustainable, efficient, and patient-centered.

For assessing the competitiveness and resilience of medical organizations, multiple research methods and analytical techniques are applied, each targeting different aspects of institutional performance and adaptability. These are presented in Table 1.

Table 1. Methods and Techniques Used to Evaluate the Competitiveness and Resilience of Medical Organizations

Methods & Techniques	Description
SWOT Analysis *(Strengths, Weaknesses, Opportunities, Threats)*	A key tool for evaluating competitiveness, helping identify the strengths and weaknesses of medical organizations as well as external opportunities and threats. This method enables a detailed strategic assessment of an organization's position relative to competitors and external conditions in the healthcare market.
Benchmarking	This technique involves comparing the performance of a medical institution with that of leading organizations in the sector. Benchmarking highlights best practices and performance gaps, providing a framework for continuous improvement in competitiveness and resilience.

Methods & Techniques	Description
Performance Indicator Analysis	Uses key indicators such as treatment success rates, economic efficiency (costs and profitability), patient satisfaction, and others to evaluate the competitiveness and resilience of medical organizations. These indicators are essential for continuously monitoring and optimizing healthcare services.
Statistical and Econometric Methods	To analyse relationships between performance and competitiveness variables, the study applies advanced statistical techniques such as multiple regression, correlation analysis, and factor analysis. These methods help identify the main determinants of competitiveness and resilience based on objective healthcare data.
Surveys and Questionnaires	Structured questionnaires and opinion surveys are used to measure patient satisfaction and medical staff perceptions of service quality. These tools provide valuable insights into the subjective component of competitiveness—namely, patient satisfaction and loyalty.
Delphi Method	This method seeks to achieve consensus among a group of experts, making it particularly useful for identifying the key dimensions of resilience and competitiveness in medical organizations. It enables forecasting and the formulation of strategic recommendations to improve institutional performance and sustainability.

Source: Compiled by the authors based on the studied methods.

The authors emphasize that supporting the research requires statistical data from official and international sources, such as the World Health Organization (WHO), Eurostat, the Ministry of Health of the Republic of Moldova (MS), and case studies published in specialized journals.

A SWOT analysis was applied to the healthcare system of the Republic of Moldova with the goal of identifying strategies to strengthen the competitiveness and resilience of medical organizations. The implementation of strategic recommendations was conducted at a theoretical and prospective level by correlating digitalization, investment, and organizational performance indicators with the objectives outlined in national policy documents, including the National Health Strategy 2021–2030, the Digitalization Plans for the Healthcare Sector, and reports from the MS.

4. Research results and comments

The SWOT analysis was applied to the healthcare system of the Republic of Moldova with the objective of identifying strategies to strengthen the competitiveness and resilience of medical organizations. The implementation of strategic recommendations was carried out at a theoretical and prospective level, correlating digitalization indicators, investments, and organizational performance with the objectives established in national policy documents, including the National Health Strategy 2021–2030, the Digitalization Plans for the Healthcare Sector, and reports from the MS. The key results are as follows:

- Identification of priority action areas: digitalization of medical records, investments in hospital infrastructure, and strengthening of the healthcare workforce.
- Formulation of SO, ST, WO, and WT strategies to enhance both the competitiveness and resilience of the healthcare system against future crises.
- Correlation of SWOT findings with health indicators such as life expectancy, mortality rates, and the Public Health Index, enabling a holistic approach to evaluating system performance.
- Development of a foundation for public policy recommendations aimed at aligning Moldova's healthcare system with European health standards.

Thus, the application of SWOT was not merely an abstract exercise; it led to the creation of operational strategies that can be integrated into health policies and facilitate the transition toward a more competitive, digitalized, and resilient healthcare model.

This study explores the organizational and communicative dimensions of the interaction between doctors, patients, and medical institutions in managing patients' quality of life, focusing on the

context of the Republic of Moldova and Eastern Europe. The methodological approach is qualitative and descriptive-analytical, aiming to:

- Identify key communication practices;
- Examine institutional arrangements;
- Analyze systemic barriers affecting perceived care quality and quality of life.

A comparative analysis was conducted using publicly available data from neighboring countries (Romania, Ukraine, Poland, etc.) to contextualize systemic factors at the Eastern European level.

The analysis combined thematic content analysis (for qualitative data) and descriptive statistics (for quantitative indicators) to synthesize the multilayered relationship between communication, organizational structure, and patients perceived quality of life.

Table 2. SWOT analysis of the healthcare system in the Republic of Moldova (2023)

Strengths (S)	**Weaknesses (W)**
• Qualified medical staff and professional experience. • Ongoing reforms and digitalization initiatives (electronic medical records, telemedicine). • International support (WHO, EU, development partners). • Increased access to basic healthcare services.	• Chronic underfunding of the healthcare system. • Outdated hospital and technological infrastructure. • Physician migration and shortage of medical personnel. • Low healthcare investment (5.6% of GDP). • Low average life expectancy (72.4 years). • Public health index below the regional average (55.8). • Insufficiently modernized infrastructure and lack of specialized staff. • Territorial disparities in access to medical services.
Opportunities (O)	**Threats (T)**
• Access to European funds and international projects. • Integration into regional healthcare programs. • Development of digital technologies and e-health solutions. • Growing public awareness of preventive healthcare.	• Rapid population aging. • Epidemiological crises (COVID-19, influenza, emerging diseases). • Economic instability and external financial dependency. • Rising costs of medicines and medical technologies.

Source: Compiled by the authors based on data from the Global Health Security Index and Numbeo Health Care Index.

Table 2 summarizes the SWOT analysis of Moldova's healthcare system for 2023, highlighting strengths, weaknesses, development opportunities, and both internal and external threats that may affect system performance. The operationalization of the SWOT results into strategic directions for Moldova's healthcare development is summarized in Table 3 below:

Table 3. Summary of the SWOT analysis of the healthcare system in the Republic of Moldova (2023)

Strategy Type	**SWOT Combination**	**Example Strategic Directions for Moldova**
Growth Strategies (SO)	Strengths + Opportunities	• Expand telemedicine using existing digital infrastructure and EU funding. • Develop medical university centers as hubs for innovation. • Create public–private partnerships to modernize hospitals.
Stability Strategies (ST)	Strengths + Threats	• Leverage the well-trained medical workforce to effectively manage epidemiological crises. • Strengthen the existing hospital network to address the challenges of an aging population. • Implement national healthcare resilience programs.

Strategy Type	SWOT Combination	Example Strategic Directions for Moldova
Recovery Strategies (WO)	Weaknesses + Opportunities	• Reduce medical staff migration by offering financial incentives from external funding. • Modernize hospital infrastructure through international projects. • Advance digital hospital management to minimize bureaucracy.
Risk Minimization Strategies (WT)	Weaknesses + Threats	• Restructure the hospital network by merging underperforming units. • Prioritize investments to reduce regional healthcare inequalities. • Implement cost-efficiency policies and decrease dependency on imported medicines.

Source: Compiled by authors based on data from the MS, WHO, and related sources.

Table 4. Implementation of SWOT strategies and achieved results in the healthcare system of the Republic of Moldova (2023)

Strategy Type	Proposed Implementation	Achieved / Expected Results
SO (Strengths + Opportunities)	• Nationwide implementation of the electronic medical record (EMR) system. • Investments in digital hospital infrastructure. • Public–private partnerships for innovative healthcare services.	• Improved access to patient data and faster diagnosis & treatment. • Increased medical efficiency and transparency. • Higher patient satisfaction and service quality.
ST (Strengths + Threats)	• Strengthening medical management through digital technologies. • Establishing regional excellence centers for emergency and crisis response.	• Reduced vulnerabilities during crises (e.g., COVID-19). • Improved institutional resilience and capacity for rapid response.
WO (Weaknesses + Opportunities)	• Continuous digital skills training and modern management education for medical staff. • Establishment of a National Investment Fund for hospital modernization.	• Increased professional competence. • Reduced medical workforce migration. • Enhanced hospital infrastructure and access to external funding.
WT (Weaknesses + Threats)	• Retention policies through salary incentives and improved social benefits. • A National Action Plan to reduce inequalities in healthcare access.	• Mitigated effects of medical staff migration. • Reduced regional healthcare disparities. • Increased public trust in the healthcare system.

Source: Compiled by authors based on data from MS & WHO.

Table 5. Correlation of Public Health with the Level of Digitalization, 2023 (0–100 points)

Neighboring European countries	CV Index (0–190 points)	Public health level	Access to e-health records (all life events) DESI	Digital public services for citizens	E-Government users	Average life expectancy, years
Czech Rep.	162.6	75.3	47.44	76.17	86.02	79.9
Croatia	159.2	64.1	85.57	71.12	68.72	75.7
Slovakia	151.2	60.3	44.77	67.24	81.59	77.4
Poland	140.0	57.8	86.40	59.92	62.62	77.1
Hungary	137.1	53.4	79.91	67.87	81.02	77.2
Romania	133.4	56.2	57.07	47.58	23.55	76.8
Bulgaria	130.1	56.4	77.21	59.52	31.74	74.3
Greece	129.2	57.3	60.72	64.60	80.50	76.8
Average for these countries	142.85	60.1	67.3	65.2	64.7	76.7
Rep. of Moldova	119.39	55.8	21.3	48.5	49.7	72.4

Source: Authors' calculations based on DESI 2023 EU Index (European Commission, 2023).

From Table 6, by comparing the dynamic rows, we can determine:

- on the one hand, a direct proportional relationship between the decline in public health and the decrease in health investments;
- on the other hand, a proportional decline in public health associated with the decrease in average life expectancy.

Table 6. Dependence of public health level and average life expectancy on health investments, 2023

Neighboring European countries	Public health level (0–100 points)	Investments in public health, % of GDP	Average life expectancy, years
Czech Republic	75.3	9.5	79.9
Poland	64.1	9.1	75.7
Slovakia	60.3	8.3	77.2
Bosnia and Herzegovina	57.8	9.0	77.2
Albania	53.4	6.7	75.8
Hungary	56.2	6.7	74.3
Romania	56.4	6.5	76.8
Croatia	57.3	8.0	78.8
Montenegro	54.3	6.4	74.8
North Macedonia	52.5	6.2	68.6
Greece	54.3	8.6	75.1
Serbia	57.9	8.5	76.3
Bulgaria	45.6	8.6	75.1
Belarus	48.3	6.9	72.2
Average of countries	**56.6**	**7.7**	**75.5**
Republic of Moldova	55.8	5.6	72.4

Source: Authors' calculations based on data from the Global Health Security Index and Numbeo Health Care Index 2023.

Table 6 presents the values of indicators relevant to public health in 15 European countries, including the Republic of Moldova, in relation to health investments in 2023. The average level of public health across these countries is 56.6 points, with an average investment of 7.7% of GDP and an average life expectancy of 75.5 years. The Republic of Moldova is below these averages, with a public health level of 55.8 points, investments of 5.6% of GDP, and an average life expectancy of 72.4 years.

Digital transformation emerged as a key driver for reducing inefficiencies, improving service quality, enhancing access to healthcare, lowering medical costs, and supporting personalized care. The authors highlight that the ultimate goal of e-health is to shift healthcare delivery from a hospital- and physician-centered model to a patient-centered model that fully integrates digital technologies into public health services.

Dynamic data analysis revealed a direct positive relationship between health investments and public health outcomes:

- Czechia invests 9.5% of GDP in healthcare and achieves a Public Health Index score of 75.3.
- Moldova (5.6% of GDP) and North Macedonia (6.2% of GDP) score significantly lower - 55.8 and 52.5, respectively.

This underscores the critical role of financial investments in maintaining and improving population health. However, the relationship between life expectancy and public health levels is positive but not strictly linear. For instance:

- Czechia and Croatia have both high Public Health Index scores and high life expectancies (79.9 and 78.8 years, respectively).
- Bulgaria, despite investing 8.6% of GDP, has a relatively low public health score (45.6) and a moderate life expectancy (75.1 years).

These findings highlight that investment alone is insufficient; system efficiency and service quality are equally critical.

Statistical results indicate a strong positive correlation between digitalization and the Public Health Index ($r = 0.72$, $p < 0.01$). Countries with higher digitalization scores achieve better public health outcomes, whereas Moldova remains below the regional average.

This supports existing literature (Porter & Lee, 2013; OECD, 2021), which argues that digitalization enhances accessibility and reduces informational asymmetries between healthcare providers and patients. However, the effect is context-dependent: gaps in infrastructure, staff digital skills, or IT system interoperability can significantly diminish its impact.

The correlation between healthcare spending and life expectancy is significant ($r = 0.68$, $p < 0.05$), confirming that financial resources are foundational for sustainable reforms (WHO, 2022).

However, this relationship is non-linear: beyond a certain investment threshold, marginal returns decrease, making governance quality and spending efficiency more important than simply increasing budgets.

A multiple regression model shows that digitalization and investments together explain 62% of the variation in life expectancy ($R^2 = 0.62$, $p < 0.01$). This demonstrates a synergistic effect:

- Investments alone do not maximize outcomes without digital transformation.
- Digitalization alone cannot fully substitute for financial resources.

Analytical visualization

To illustrate Moldova's positioning within the European context, the authors developed a comparative radar chart assessing Moldova and Europe across six key dimensions:

- General objectives
- Strategic priorities
- Digitalization and innovation
- Governance efficiency
- Healthcare financing
- Relevance for Moldova

This visual analysis provides a clear strategic benchmark, supporting tailored policy recommendations for Moldova's healthcare system by 2030.

- The "Health 2030" Strategy of Moldova is designed in direct alignment with European programs and WHO frameworks.
- The digitalization and resilience dimensions are the most strongly synchronized with the EU agenda (EU4Health + EHDS).
- Moldova benefits from a flexible framework, but for proper implementation, it requires external financial resources and strategic partnerships.
- The connection with Preparedness 2.0 and EMT 2024–2030 is crucial for managing health emergencies and crises similar to COVID-19.
- The European Health Data Space (EHDS) is likely the biggest challenge for Moldova → requiring interoperability, IT infrastructure, and data protection.

Without an integrated strategy that combines financial resources and digital modernization, healthcare systems remain vulnerable to future crises. However, some methodological limitations must be acknowledged:

- Correlation does not imply causation — countries with better health outcomes may invest more in digitalization, not the other way around.
- Important control variables (e.g., social inequality, preventive health policies, demographics) were not included in the model.

The findings support the conclusion that modernizing healthcare systems requires a dual approach:

1. Increasing financial investments;
2. Accelerating digital transformation.

These two pillars are complementary rather than substitutive. The SWOT analysis (Table 1) serves as a diagnostic tool for guiding policies that strengthen Moldova's alignment with European health standards.

The application of the SWOT analysis in Moldova's healthcare sector serves not only a diagnostic purpose but also a prospective one:

1. Identifying the dominant strategic approach – In Moldova's case, the analysis shows the need for recovery and growth strategies, as external opportunities (EU funds, digitalization, partnerships) can compensate for structural weaknesses (underfunding, outdated infrastructure).
2. Highlighting major risks – Without proper interventions, internal weaknesses combined with external threats may lead to decline scenarios (e.g., a decrease in the number of doctors, reduced access to healthcare in rural areas).
3. Supporting public policy decisions – The MoH can use the findings to prioritize investments and reforms based on the identified quadrants.

Methodologically, after the SWOT analysis, the next step involves strategy formulation by combining the SWOT elements:

- SO (Strengths + Opportunities) → Growth / Development Strategies
- ST (Strengths + Threats) → Stability / Resilience Strategies
- WO (Weaknesses + Opportunities) → Recovery / Optimization Strategies
- WT (Weaknesses + Threats) → Risk Minimization / Withdrawal Strategies

The authors emphasize that the application of the SWOT analysis to Moldova's healthcare system serves not only a diagnostic purpose but also a strategic, forward-looking one. Its findings enable the identification of suitable development strategies, highlight systemic vulnerabilities, and support evidence-based policy decisions for sustainable reforms.

Key insights from the analysis

1. Defining the dominant strategy – The findings reveal that Moldova primarily needs recovery and growth strategies, as opportunities (e.g., EU funding, digital transformation, international partnerships) can partially offset structural weaknesses (e.g., underfunding, outdated infrastructure).
2. Identifying major risks – Without timely interventions, internal weaknesses combined with external threats may lead to decline scenarios such as reduced healthcare workforce and limited access to services, especially in rural areas.
3. Guiding policy decisions – The analysis provides a solid foundation for prioritizing reforms and investments, aligning national strategies with European standards.

The SWOT analysis demonstrates that Moldova's healthcare system is at a critical juncture, where structural vulnerabilities coexist with significant strategic opportunities. The results confirm the need to implement growth and resilience strategies by:

- Accelerating digitalization and modernizing healthcare infrastructure;
- Retaining and motivating healthcare professionals;
- Integrating EU quality and performance standards;
- Strengthening institutional capacity for prevention and crisis response.

Thus, SWOT serves not only as a snapshot of the current state but also as a roadmap for reforms, setting Moldova on a path toward competitiveness, sustainability, and resilience by 2030.

Alignment with European Health Strategies

The comparative analytical framework highlights the degree of convergence between Moldova's National Health Strategy 2030 and European health policy documents, particularly regarding objectives, financing, governance, and digital transformation. These reforms align with the broader European policy framework (WHO Europe, 2013) and the strategic immunization agendas targeted for the end of the decade (WHO Europe, Regional Office for Europe, 2024a). Key European strategies include:

- Health 2020 (WHO Europe) – Strategic framework (2012) emphasizing governance, leadership, and reducing health inequalities through community-focused reforms and improved resilience.

- European Immunization Agenda 2030 (EIA 2030) – Adopted by 53 WHO Europe member states, focusing on equitable vaccine access, cross-sectoral cooperation, and monitoring frameworks (WHO, Regional Office for Europe, 2024a).
- Preparedness 2.0 & EMT Action Plan (2024–2030) – WHO Europe strategies aimed at strengthening emergency response capacity and developing rapid medical intervention teams.
- EU Global Health Strategy (European Commission, 2022a) – A European Commission framework prioritizing system resilience, digital transformation, and universal access to safe healthcare.
- EU4Health Programme (2021–2027) – The EU's largest health funding program, launched in response to COVID-19, focused on crisis preparedness, digitalization, workforce development, and improved medicine access (European Commission, n.d.).
- European Health Data Space (EHDS, 2025) – An EU regulation enabling interoperable electronic health data management and seamless cross-border healthcare coordination.

5. **Conclusion and policy recommendations**

Life expectancy is an integrative indicator reflecting not only the health status of the population but also the managerial performance and resilience capacity of healthcare systems. Comparing global, European, and national values highlights significant gaps between the Republic of Moldova and the European Union, underlining the urgent need for reforms focused on digitalization, infrastructure investment, and strengthening human resources in healthcare.

Life expectancy is one of the most relevant synthetic indicators of healthcare system performance. In 2023, the Republic of Moldova recorded an average life expectancy of 72.4 years, marking a modest recovery after the decline caused by the COVID-19 pandemic. However, this value remains below the European average of 80–82 years, revealing structural and operational gaps that require systemic interventions to strengthen the resilience of the healthcare sector.

The analysis confirms that digitalization and health investments are key determinants of healthcare system performance, influencing both the quality of services and macro-level health indicators, such as life expectancy. The identified correlations show that these two dimensions do not function independently but work synergistically, generating cumulative effects on the resilience and competitiveness of health systems. Nevertheless, these relationships must be interpreted within the socio-economic and institutional specificities of each country, since their impact varies depending on existing infrastructure, human capital, and governance capacity.

The SWOT analysis provides a clear picture of the balance between existing resources and systemic challenges in Moldova's healthcare sector, forming the basis for strategic planning and public health policies. The results of applying the SWOT framework and transforming it into concrete strategies demonstrate that Moldova possesses significant potential for modernizing its healthcare system.

Healthcare reforms must avoid fragmented approaches. Increased investments in infrastructure and human resources cannot generate sustainable effects without a robust digital framework—just as digitalization cannot compensate for insufficient funding. Policies should promote an integrated model, where digitalization acts as a multiplier of investment efficiency.

To fully benefit from digital transformation, it is essential to develop interoperable, secure, and accessible platforms for all healthcare stakeholders. Investments in telemedicine, electronic patient records, and AI-assisted diagnostics can significantly reduce inequalities and optimize resource allocation.

The correlation between investments and life expectancy demonstrates the importance—but also the limitations - of financial resources. An effective policy does not only imply increasing the budget but also requires strict monitoring of fund utilization, prevention-oriented strategies, and impact evaluation of implemented programs.

Digital infrastructure cannot function without qualified human capital. Continuous education programs and specialized training for healthcare professionals are essential conditions for the success of digital reforms.

The implementation of digitalization and investment efficiency must consider equity. Public policies must ensure that the benefits of digital transformation are not limited to urban centers or elite institutions but also reach rural and vulnerable communities.

The coherent implementation of these measures can transform Moldova's healthcare system into a more sustainable, equitable, and patient-centered model, contributing to the country's sustainable development goals and European integration.

Recent evidence highlights that in the Republic of Moldova, achieving public health goals and narrowing gaps with the European average depend on integrated strategies that combine innovation, equity, sustainability, and institutional resilience.

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