INTERNATIONAL JOURNAL OF ECONOMICS AND FINANCE STUDIES
Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120
Received: 21.09.2025 | **Accepted:** 22.12.2025 | **Published Online:** 30.03.2026

-RESEARCH ARTICLE-

HEALTH INVESTMENT, LABOUR PRODUCTIVITY, AND ECONOMIC GROWTH: A FINANCIAL-ECONOMIC ANALYSIS

Jianfeng Yao

Department of Economics, Bridgewater State University,
Bridgewater, MA 02325, USA
ORCID: https://orcid.org/0009-0004-5630-4246
Email: jyaocontact23@gmail.com

Agir Kurmaj

School of Business, University of Rio Grande, Rio Grande, OH
45674, USA
ORCID: https://orcid.org/0009-0003-3699-2566
Email: akurmaj@gmail.com

Keila Pires

Department of Economics, Bridgewater State University,
Bridgewater, MA 02325, USA
ORCID: https://orcid.org/0009-0005-8338-7769
Email: pireskeila92@gmail.com

─Abstract─

Health investment is increasingly recognised as a key determinant of labour productivity and sustained economic growth, as a healthier workforce tends to exhibit higher efficiency, reduced absenteeism, and stronger human capital accumulation. Despite a substantial body of existing research confirming this association, a significant gap remains in understanding the integrated financial–economic transmission mechanisms through which health investment simultaneously influences productivity outcomes and macroeconomic performance. This study therefore examines the financial–economic nexus between health investment, labour productivity, and economic growth in order to develop a more holistic and unified perspective. A qualitative research design was adopted, specifically a Systematic

Citation (APA): Yao, J., Kurmaj, A., Pires, K. (2026). Health Investment, Labour Productivity, and Economic Growth: A Financial-Economic Analysis. *International Journal of Economics and Finance Studies*, 18(01), 417-439. doi: 10.34109/ijefs.2026180120

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

Literature Review (SLR) guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, covering peer-reviewed studies published from 2015 onwards. The selected literature was analysed using thematic analysis to identify recurring patterns, linkages, and conceptual relationships across studies. The findings indicate a positive yet conditional relationship between health expenditure, labour productivity, and economic growth, with outcomes strongly contingent on institutional quality, the efficiency of resource allocation, and the presence of complementary investments. The review further highlights the critical roles of financial system development, technological progress, and sustainability considerations in shaping these relationships. Overall, the evidence suggests that health investment should be treated not merely as a social expenditure but as a strategic economic policy instrument capable of supporting sustainable and inclusive economic growth when effectively managed.

Keywords: Economic Growth, Health Investment, Labour Productivity, Financial Analysis, Economic Analysis.

INTRODUCTION

Health investment is widely recognised as a critical determinant of labour productivity and long-run economic growth across both developed and developing economies. A healthier workforce enhances overall economic performance through higher efficiency, reduced absenteeism, and stronger human capital accumulation (Aldrickzler et al., 2025). Consequently, government and private expenditure on healthcare should not be viewed solely as a social obligation but also as a strategic economic investment that supports sustainable growth trajectories.

Despite the well-established linkage between health investment, productivity, and growth, limited attention has been given to its integrated policy and financial dimensions. Existing studies predominantly examine the separate effects of health expenditure on either productivity or economic growth, while insufficiently addressing the interaction between financial systems, institutional quality, and resource allocation efficiency in shaping outcomes. This review addresses this gap by synthesising evidence on the financial–economic mechanisms through which health investment translates into labour productivity gains and macroeconomic performance, with particular emphasis on efficiency, marginal returns, and policy-relevant trade-offs across institutional contexts. The theoretical foundation of this relationship is grounded in endogenous growth theory, which incorporates health as a component of human capital that directly influences productivity and output. Early contributions in this field argue that improved population health enhances both the physical and cognitive capacities of workers, thereby raising productivity levels (Bonzini et al., 2023). Empirical research has since expanded significantly, examining dynamic

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

relationships between health expenditure, labour productivity, and economic growth across different regions and income groups (Hu & Wang, 2024).

However, despite the expanding literature, key questions remain regarding the precise mechanisms through which health investment is converted into productivity improvements and economic growth. This issue is particularly evident in economies where rising healthcare expenditure has not been matched by commensurate health outcomes, raising concerns about inefficiencies and suboptimal resource allocation (Brikci et al., 2024). Furthermore, variations in institutional quality and economic structure complicate the relationship, limiting the generalisability of findings across countries. A clear gap in the literature lies in the lack of integrated financial–economic analysis capturing the dual impact of health investment on both labour productivity and macroeconomic growth simultaneously. While some studies focus on either growth or productivity effects in isolation, few examine their interdependence within a unified analytical framework (Rojas-Sánchez et al., 2022). In addition, issues related to spending efficiency and marginal returns remain underexplored across heterogeneous economic environments.

Overall, empirical evidence consistently indicates a positive association between health investment, labour productivity, and economic growth. Studies from OECD countries and emerging economies suggest that higher healthcare expenditure is generally linked to productivity gains and GDP growth improvements (Ye & Zhang, 2018). Nevertheless, the magnitude and direction of these effects vary considerably depending on policy design, institutional effectiveness, and implementation quality. Against this backdrop, the present study aims to examine the financial–economic linkages between health investment, labour productivity, and economic growth. Specifically, it evaluates the extent to which health expenditure influences productivity and growth outcomes, assesses expenditure efficiency, and derives policy-relevant insights for improved resource allocation. In doing so, it contributes to the literature by offering an integrated perspective on economic development through the lens of health investment.

LITERATURE REVIEW

Relationship between Health Investment and Labour Productivity

Empirical literature broadly and consistently identifies a positive association between health investment and labour productivity, although the magnitude and transmission channels of this relationship remain contested. Ernawati et al. (2022) show that workplace wellness programs can help improve employee well-being and can help reduce absenteeism and increase productivity, especially if they focus on workers' health and work-life needs. Similarly, Hussien et al. (2025) demonstrate that historical improvements in population health have played a significant role in long-term

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

productivity growth in industrialised economies. Recent studies further suggest that the accumulation of health capital enhances worker efficiency, particularly in emerging economies where baseline health conditions are more variable.

However, the evidence base is not uniform and increasingly reflects a more conditional and context-dependent relationship. While a substantial body of research continues to report positive effects, it also highlights that the productivity gains from health investment are frequently mediated by complementary factors such as education, infrastructure development, and broader socio-economic conditions (Adegoke et al., 2022; Kanval et al., 2024). In addition, institutional constraints—including inefficiency, weak governance, and misallocation of resources—can significantly reduce or even offset the expected benefits of health spending, particularly in low-income contexts such as West African economies (Badmus et al., 2026). Collectively, this strand of evidence challenges the deterministic assumptions of traditional Human Capital Theory by demonstrating that health investment alone is insufficient to guarantee productivity improvements. Instead, the effectiveness of health spending is contingent upon enabling structural, institutional, and complementary developmental conditions.

Health Investment and Economic Growth Dynamics

The relationship between health investment and economic growth has been widely examined in empirical literature, with a substantial body of evidence indicating a generally positive association. Cabañero-García et al. (2025) show that better access to health care and long-term care services for older people can improve their well-being and reduce health inequalities, which can contribute to the social and economic sustainability of ageing populations. Similarly, Magida et al. (2025) find that health expenditure contributes to human capital formation, which in turn supports sustained economic growth in developing economies. Collectively, these findings reinforce the view that health constitutes a fundamental driver of macroeconomic performance. However, several important conceptual and empirical complexities complicate this relationship. First, the issue of causality remains unresolved, with significant endogeneity concerns making it difficult to isolate the true effect of health expenditure on growth outcomes (Chen & Chen, 2021). This raises an important methodological question: observed associations may reflect not only the impact of health on income, but also reverse causality, whereby higher income levels enable improved health outcomes. Second, evidence suggests the presence of diminishing marginal returns to health investment, particularly in advanced economies, where additional expenditure beyond a certain threshold yields progressively smaller gains in productivity and growth (Wang & Chen, 2021). This highlights the importance of evaluating not only the scale but also the efficiency and allocation of public health spending.

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

Third, the transmission mechanisms linking health investment to economic outcomes are often constrained by systemic inefficiencies, including weak healthcare delivery systems, resource misallocation, and governance failures, all of which may prevent health expenditure from translating into measurable macroeconomic gains. Finally, these effects are highly context-dependent, with substantial cross-country heterogeneity driven by differences in institutional quality, levels of economic development, and the availability of complementary inputs. Taken together, these limitations indicate that more advanced analytical frameworks are required to accurately capture the complex and non-linear relationship between health investment and economic growth.

Theoretical Foundation: Human Capital Theory

A foundational theoretical lens for explaining the link between health investment, labour productivity, and economic growth is Human Capital Theory. This framework posits that investments in human capabilities—particularly health and education—enhance the physical and cognitive capacities of individuals, thereby raising productivity levels and improving overall economic performance (Schultz, 1961). Within this perspective, health is conceptualised as a form of productive capital that strengthens workplace efficiency, extends working life, and increases potential output (Sorensen et al., 2021). Accordingly, economic growth is driven not merely by the size of the labour force, but by its quality, as a healthier workforce is inherently more productive and economically effective.

Nevertheless, empirical findings indicate that these relationships are neither strictly linear nor automatically realised. The productivity effects of health investment are often conditional on broader structural and institutional factors, including governance quality, labour market conditions, and the efficiency of resource allocation (Sunny et al., 2025). In many cases, these contextual constraints can weaken, distort, or even offset the expected returns to health spending, suggesting that the theory may overstate the consistency and predictability of positive outcomes. Therefore, while Human Capital Theory provides a robust conceptual foundation for understanding the role of health in economic development, its practical applicability requires careful consideration of institutional heterogeneity and context-specific conditions.

Integrated Perspectives on Health Investment and Labour Productivity

An expanding strand of literature adopts a more integrated approach, emphasising the complementary relationship between health investment, labour productivity, and economic growth. Evidence suggests that productivity effects emerge through complementarities within human capital formation, particularly between health and education, indicating that these dimensions are mutually reinforcing rather than independent (Chen, 2020). Similarly, Shanta and Adedokun (2025) argue that health investment contributes to economic growth indirectly by enhancing labour

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

productivity, thereby functioning as a key transmission channel within the growth process. Despite these advancements, several substantive gaps remain.

A significant limitation of the existing empirical literature is its heavy reliance on aggregate-level data, which may obscure micro-level dynamics and distributional heterogeneity. In addition, insufficient attention has been given to the financial–economic dimension of health investment, particularly in relation to expenditure efficiency, sustainability, and returns on investment. Non-linear effects and threshold dynamics are also underexplored, despite the likelihood that the impact of health spending varies across income levels, institutional contexts, and stages of development. Moreover, many studies implicitly assume cross-country homogeneity, overlooking structural differences that may significantly influence outcomes and lead to biased generalisations. The financial–economic dimension of health investment extends beyond total expenditure to encompass the efficiency and quality of spending, including fiscal efficiency, allocative efficiency, and the extent to which resources are directed towards high-impact interventions that generate human capital gains and productivity improvements. It also considers how variations in financing structures, institutional capacity, and policy design shape the conversion of health spending into sustained economic returns. These factors collectively determine the effectiveness of health investment as a driver of long-term productivity and growth.

In conclusion, although existing literature broadly supports the positive role of health investment in enhancing labour productivity and economic growth, it remains constrained by conceptual and empirical limitations. A more nuanced, context-sensitive framework is required—one that incorporates institutional heterogeneity, complementarities with other forms of capital, and the financial efficiency of health spending. Such an approach would strengthen the explanatory power of Human Capital Theory and provide a more comprehensive understanding of the health–productivity–growth nexus.

Research Gap

The existing literature broadly reports a positive relationship between health investment, labour productivity, and economic development; however, several important gaps remain. Most studies treat these relationships in isolation, without incorporating a comprehensive financial–economic framework capable of capturing their interdependencies and synergies. As a result, the integrated mechanisms through which health expenditure translates into productivity gains and broader economic outcomes are not fully understood. Furthermore, limited attention is given to efficiency considerations, resource allocation, and marginal returns across different institutional environments. This omission restricts understanding of how effectively health investments are converted into measurable economic benefits under varying policy and governance conditions. In addition, much of the empirical work relies on aggregate-level data, which fails to capture micro-level dynamics, potential nonlinear

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

effects, and cross-country heterogeneity. These limitations collectively constrain the explanatory power of existing studies and highlight the need for more nuanced analytical approaches to the health–productivity–growth nexus.

Research Methodology

This study employed a qualitative SLR design to examine health investment and its impact on labour productivity and economic development within a financial–economic framework. It further explored how health-related investments enhance workforce efficiency and overall economic performance, with particular attention to productivity levels and long-term growth outcomes. The study aimed to assess the extent to which improved health conditions influence labour capacity and contribute to broader economic growth. The review relied on secondary data drawn from peer-reviewed journal articles, scholarly publications, and reports issued by international organisations. The SLR approach was used to ensure a structured, transparent, and comprehensive selection of relevant studies. This methodology was considered appropriate for addressing the complexity of the relationship between health investment, labour productivity, and economic growth, particularly in contexts where multiple empirical findings coexist and where quantitative results alone may not fully capture the multidimensional nature of human capital and economic development outcomes.

Research Design

This analysis is based on a SLR covering interdisciplinary studies published between 2015 and 2025 on health investment, labour productivity, and economic growth within a financial–economic framework. The literature search was conducted using major academic databases, including Scopus, Web of Science, JSTOR, and Google Scholar, employing combinations of key terms such as health investment, health expenditure, labour productivity, economic growth, and human capital. Boolean operators (AND/OR) were applied to refine and optimise the search results. Study selection followed a manual screening process guided by predefined inclusion and exclusion criteria. Articles were selected based on their explicit focus on the relationship between health expenditure, labour productivity, and macroeconomic performance. The screening process involved an initial review of titles and abstracts, followed by full-text evaluation to determine eligibility for inclusion. To ensure analytical consistency, the selected studies were systematically coded according to key themes, including productivity impacts, financial performance, institutional determinants, and growth outcomes. This thematic coding enabled a structured and replicable synthesis of findings, facilitating the integration of insights from both health and economic literature and supporting a comprehensive understanding of the long-term effects of health investment on productivity and economic growth.

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

PRISMA Framework

The study was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist, aligned with established best practices for systematic literature reviews. The PRISMA framework ensured a transparent, structured, and standardised review process, facilitating the systematic identification, screening, and appraisal of relevant literature on health investment, labour productivity, and economic growth within a financial–economic context. Its application enabled a clear and replicable procedure for data collection and analysis, thereby supporting a logically coherent presentation of findings. The systematic literature search was conducted using key combinations of terms, including "health investment AND economic growth", "health expenditure AND labour productivity", and "human capital AND economic development". Only peer-reviewed journal articles published within the specified timeframe were included. The retrieved literature was further filtered based on its relevance to the relationship between health spending, workforce productivity, and macroeconomic performance. Data extraction focused on key dimensions such as principal findings, theoretical frameworks, and methodological approaches, particularly in relation to the role of health investment in shaping productivity and economic outcomes.

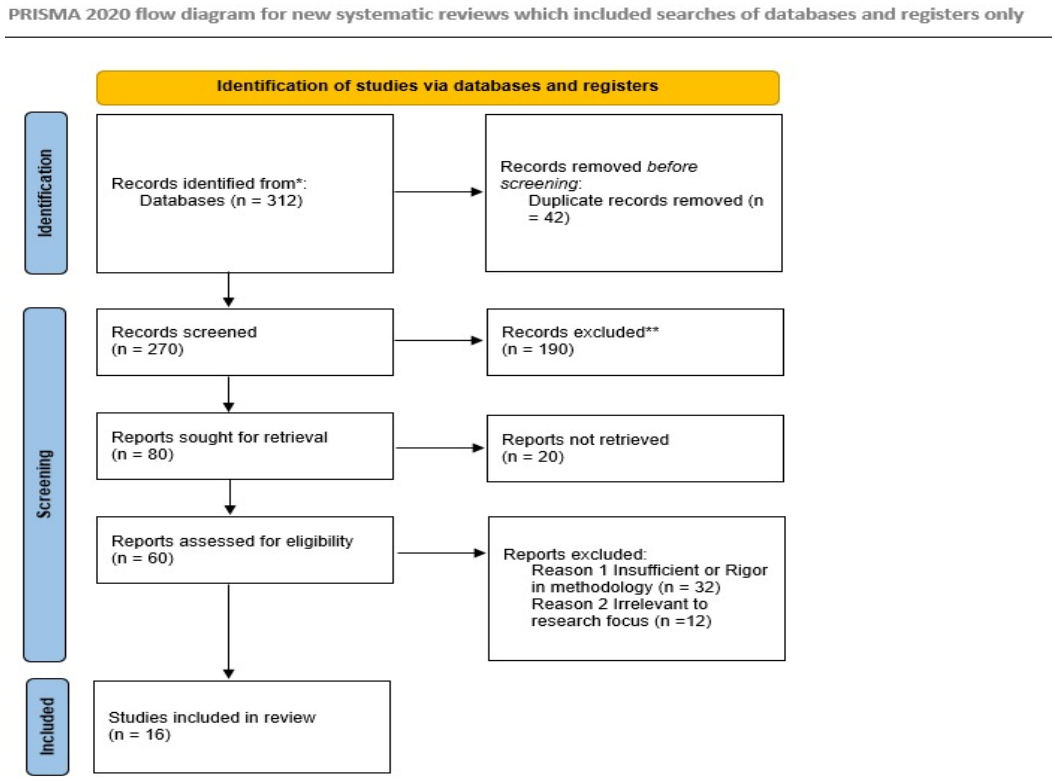

Figure 1: The PRISMA Framework for the Selection of Studies for Analysis

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

The literature search was completed in March 2026, initially yielding 312 records. After the removal of 42 duplicates, 270 studies proceeded to the screening stage. Title and abstract screening led to the exclusion of 190 studies that did not meet the inclusion criteria, primarily due to limited relevance to the health–productivity–growth nexus or lack of economic focus. This resulted in 80 studies progressing to full-text review. From these, 20 studies were excluded at the full-text stage, leaving 60 articles for detailed assessment. A further 44 studies were excluded due to methodological limitations (such as weak empirical design or insufficient rigour) or lack of alignment with the financial–economic focus of the review. Ultimately, 16 studies were included in the final synthesis. The PRISMA flow diagram (Figure 1) provides a visual representation of the selection process.

Inclusion Criteria

Peer-reviewed journal articles, policy reports, and both empirical and theoretical studies published from 2015 onwards were included in the review, provided they examined the relationship between health investment, labour productivity, and economic growth. Conceptual relevance was ensured by selecting studies that explicitly estimated at least one of the key economic outcomes—labour productivity or economic growth—in relation to health expenditure or health investment. Priority was given to studies that analysed both outcomes simultaneously; however, studies focusing on only one outcome were also retained where they contributed meaningfully to understanding the broader nexus. Eligible studies were drawn from interdisciplinary fields, including health economics, development economics, and public policy, and were required to provide either empirical evidence or theoretical insights into the role of health investment in shaping productivity and/or macroeconomic performance. This inclusion strategy ensured analytical depth and consistency across diverse methodological approaches, capturing the multiple pathways through which health investment influences economic outcomes.

Exclusion Criteria

Studies were excluded if they did not explicitly examine health investment or health expenditure in relation to economic performance, specifically labour productivity and/or economic growth. Publications dated prior to 2015 were removed, along with conference papers, theses, and dissertations, in order to maintain consistency in peer-review standards and methodological rigour. In addition, studies focusing solely on economic growth or productivity without incorporating health-related variables were excluded from the review. To further reduce subjectivity, studies that did not adopt a clear financial–economic perspective were also omitted. In this context, a financial–economic perspective was defined as one that engages with at least one of the following dimensions: public or private health expenditure, resource allocation, spending efficiency, returns on investment, or macroeconomic performance indicators. This exclusion criterion ensured that only studies directly relevant to the economic

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

mechanisms linking health investment with productivity and growth were retained for analysis.

Analysis Method

A qualitative thematic synthesis approach was employed to analyse the selected studies, enabling the systematic identification and interpretation of recurring patterns within the literature. The coding process incorporated both deductive and inductive strategies. Deductively, initial themes were derived from predefined economic constructs central to the study, namely health expenditure, labour productivity, and economic growth. Inductively, additional themes emerged from the data during analysis, including financial efficiency, institutional determinants, and contextual heterogeneity. The studies were subsequently coded and organised according to these thematic categories, facilitating structured comparison across different empirical and geographical contexts. This approach enhanced analytical consistency and supported a more integrative interpretation of how health investment influences productivity and economic performance. Overall, the thematic synthesis provided deeper insight into the conditions and mechanisms through which health investment translates into economic outcomes.

Ethical Considerations

This research relied exclusively on secondary data obtained from peer-reviewed academic journals and publicly accessible reports. All sources were appropriately cited and referenced to ensure academic integrity and to avoid any form of plagiarism. As the study did not involve primary data collection or human participants, ethical approval was not required. The research was conducted in accordance with established academic ethical standards, ensuring accurate representation of existing studies and maintaining objectivity in the interpretation and synthesis of findings.

Findings and Analysis

Specifically, the discussion demonstrates that health investment plays a pivotal role in shaping labour productivity and economic growth within a financial–economic framework. The synthesised evidence indicates that increases in health expenditure are associated with improvements in workforce efficiency, human capital formation, and overall macroeconomic performance. In general, healthier populations tend to exhibit higher productivity, lower absenteeism, and greater work capacity, which collectively contribute to sustained long-term economic growth. However, the strength of this relationship varies depending on the scale and effectiveness of health investment, institutional performance, and broader macroeconomic conditions. The findings further suggest that although health investment is a key driver of productivity and growth, its impact is not isolated. Complementary factors such as education systems, infrastructure development, and supportive policy environments also play a

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

significant role in shaping the overall economic outcomes associated with health spending.

Selected Studies for Analysis

The selected literature for analysis on the relationship between health investment, labour productivity, and economic growth satisfied the PRISMA criteria for systematic reviews. The included studies offer a comprehensive overview of prevailing research trends while also highlighting key gaps in the literature, particularly regarding the integration of financial and health-related perspectives. Collectively, these works contribute to a deeper understanding of how health investment influences economic outcomes through productivity channels. Moreover, the reviewed literature facilitates a critical examination of the dynamic interplay between human capital development, economic policy frameworks, and growth performance. In this regard, Table 1 presents a summary of the studies included in the review. The literature review identifies four key themes, summarised in Table 2, highlighting the interrelationships between health investment, financial allocation processes, labour productivity, and economic growth within a financial–economic framework. These themes are central to explaining how variations in healthcare expenditure, allocation efficiency, and financial resource mobilisation influence labour productivity, which in turn contributes to sustained economic growth. Furthermore, the thematic structure emphasises the critical role of institutional, structural, and macroeconomic determinants in shaping the health–economic nexus. This provides a more comprehensive understanding of how strategic health investment can support long-term economic development and enhance overall economic resilience.

Health Investment and Financial Allocation in Healthcare Systems

This paper examines the role of financial distribution and equity in shaping the effectiveness of health investment across different institutional contexts. Empirical evidence suggests that both the allocation patterns and underlying determinants of health expenditure are critical in determining whether spending translates into equitable and effective outcomes. Zhou (2025), for instance, shows that although total health expenditure in China increased significantly between 2015 and 2021, regional disparities persisted, indicating that rising aggregate spending does not necessarily ensure equitable access to healthcare services. Similarly, Wang and Chen (2021) identify structural drivers such as population ageing and rising income levels—consistent with Baumol's cost disease—which contribute to increasing healthcare expenditure without necessarily improving efficiency or service delivery outcomes. In contrast, Onofrei et al. (2021) find that in EU developing countries, higher government health spending is positively associated with improved population health outcomes, suggesting that the effectiveness of expenditure is strongly influenced by governance quality and institutional capacity.

INTERNATIONAL JOURNAL OF ECONOMICS AND FINANCE STUDIES
Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120
Received: 21.09.2025 | **Accepted:** 22.12.2025 | **Published Online:** 30.03.2026

Table 1: Summary of the Reviewed Studies

Citation	Aim / Title	Findings	Codes
Zhou (2025)	Equity of total health expenditure in China	Improved equity but regional disparities persist.	Health Expenditure, Equity, China
Onofrei et al. (2021)	Government health expenditure & public health outcomes (EU)	Higher spending improves public health outcomes.	Government Health Expenditure, Public Health Outcomes, European Union
Wang and Wang (2021)	Determinants of China's health expenditure growth	Aging and income drive rising health costs.	Health Expenditure Growth, China
Kwilinski and Vysochyna (2024)	Efficiency of healthcare financing (Europe)	Efficient allocation enhances system performance.	Efficiency, Healthcare Financing
Guo et al. (2025)	Health investment & economic resilience	Health investment strengthens economic resilience.	Health Investment, Economic Resilience
Zhang et al. (2021)	Public spending & green economic growth (BRI)	Spending boosts growth via green finance.	Public Spending, Green Economic Growth
Wang (2015)	Optimal healthcare expenditure and economic growth	Increasing health spending will improve economic performance up to a certain point, after which further spending will provide less and less economic benefit.	Optimal Health Spending
Beylik et al. (2022)	Health expenditure & growth (OECD)	Health spending significantly drives economic growth.	Health Expenditure, Economic Growth, Organisation for Economic Co-operation and Development
Ha et al. (2025)	Digital transformation & labour productivity (Vietnam)	Digitalization enhances productivity and income.	Digital Transformation, Labour Productivity
Mariev et al. (2025)	Labour deregulation & productivity (BRICS)	Deregulation improves productivity with limits.	Labour Market Deregulation, Labour Productivity
Liu and Huo (2024)	Health human capital in China	Health capital positively affects economic output.	Health Human Capital, China
Pariboni and Tridico (2020)	Structural change & labour productivity (Europe)	Institutions shape productivity dynamics.	Structural Change, Labour Productivity

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

Citation	Aim / Title	Findings	Codes
Sarwar et al. (2019)	Growth, education, health nexus (global)	Health and education drive economic growth.	Health, Education, Economic Growth
Woji (2024)	Health expenditure & development (Nigeria)	Public health spending promotes development.	Health Expenditure, Economic Development
Sungur et al. (2024)	Health capital & growth during COVID-19	Health capital supports sustainable growth.	Health Capital, Sustainable Economic Growth
Anwar et al. (2022)	Environmental quality and healthcare expenditure nexus in developing countries	Poor environmental quality leads to higher healthcare spending.	EQ-HE; Pollution; Health Costs

Table 2: Themes and Description

Themes	Description	Studies
Theme 1: Health Investment and Financial Allocation in Healthcare Systems	Focuses on distribution, efficiency, and determinants of health expenditure across countries, emphasizing equity and financial sustainability.	Zhou (2025); Onofrei et al. (2021); Wang and Wang (2021); Kwilinski and Vysochyna (2024)
Theme 2: Financial and Health Investment Determinants of Labour Productivity	Examines how health spending and financial mechanisms influence labour productivity and economic performance through human capital and efficiency channels.	Guo et al. (2025); Zhang et al. (2021); Wang (2015); Beylik et al. (2022)
Theme 3: Labour Productivity and Economic Growth Dynamics	Analyses structural, institutional, and technological drivers of labour productivity and their impact on economic growth across regions.	Ha et al. (2025); Mariev et al. (2025); Liu and Huo (2024); Pariboni and Tridico (2020)
Theme 4: Financial–Economic Nexus of Health Investment, Productivity, and Growth	Explores the integrated relationship between health investment, economic growth, environmental factors, and sustainability within a macroeconomic framework.	Sarwar et al. (2019); Woji (2024); Sungur et al. (2024); Anwar et al. (2022)

INTERNATIONAL JOURNAL OF ECONOMICS AND FINANCE STUDIES
Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120
Received: 21.09.2025 | **Accepted:** 22.12.2025 | **Published Online:** 30.03.2026

From a financial efficiency perspective, Kwilinski and Vysochyna (2024) emphasise that healthcare system performance is determined not merely by the volume of funding but by the design of financing mechanisms within European contexts. Their findings highlight allocative efficiency, transparency, and fiscal sustainability as key determinants of maximising returns on health investment. Collectively, these studies demonstrate a nuanced relationship in which equity in distribution, macroeconomic pressures, and institutional efficiency jointly mediate the effectiveness of health spending. Overall, the evidence supports a shift in policy thinking away from an exclusive focus on expenditure levels towards a more balanced framework that prioritises both equity and efficiency, ensuring that increased spending translates into measurable improvements in health outcomes and broader economic performance.

Financial and Health Investment Determinants of Labour Productivity

Theme 2 focuses on the role of health and financial investments as key determinants of labour productivity through the human capital transmission mechanism. Empirical evidence consistently indicates that health expenditure enhances workforce efficiency, resilience, and overall capacity to work. Guo et al. (2025), for example, demonstrate that government healthcare investment strengthens economic resilience by improving health-related human capital, which in turn stabilises labour output during economic shocks. Similarly, Wang (2015) points out that healthcare expenditure can positively affect economic performance if it is not too high, and that proper investment in healthcare can boost human capital, productivity and economic growth. At a broader macroeconomic level, Beylik et al. (2022) confirm findings from OECD contexts, showing that health expenditure indicators have a significant impact on economic growth, with labour productivity acting as a key transmission channel.

In addition, the relationship between financial structures and health investment further shapes productivity outcomes. Zhang et al. (2021) highlight that financial system characteristics—particularly mechanisms such as green finance—mediate the impact of health investment on economic performance. This suggests that productivity gains are not determined solely by the magnitude of health spending but are also contingent upon how effectively financial systems allocate and support such investment. Overall, the evidence indicates that the relationship between health investment and labour productivity is multidimensional, driven by the interaction of human capital development, institutional efficiency, and financial intermediation. Accordingly, policy frameworks should integrate both health and financial strategies to ensure sustained productivity growth and long-term economic development.

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

Labour Productivity and Economic Growth Dynamics

Theme 3 examines the dynamic relationship between labour productivity and economic growth, with particular emphasis on technological change, institutional structures, and human capital formation. Empirical evidence indicates that productivity gains are not uniform across economies but instead vary significantly across different structural and economic conditions. For instance, Ha et al. (2025), using a quantile-on-quantile approach in Vietnam, find that the impact of digital transformation on labour productivity and earnings is heterogeneous, becoming more pronounced at higher productivity quantiles. This suggests that technological adoption tends to amplify gains among already productive segments rather than being evenly distributed across all sectors. In a similar vein, Liu and Huo (2024) highlight that human health capital plays a crucial role in economic production in China, reinforcing the view that improvements in human capital quality directly enhance productivity and overall economic performance. These findings underscore the importance of health as a core component of productive capacity within growth frameworks.

Institutional and policy-related factors further shape productivity dynamics at the macro level. Pariboni and Tridico (2020) demonstrate that labour productivity in European economies is strongly influenced by institutional configurations and structural change processes, particularly through sectoral shifts and labour reallocation mechanisms. Likewise, Mariev et al. (2025) show that labour market deregulation can initially improve productivity; however, beyond a certain threshold, it may generate adverse effects due to increased instability and weakened worker protections. Collectively, these studies illustrate that labour productivity growth is a non-linear and multidimensional process shaped by the interaction of digitalisation, human capital development, and institutional quality. Accordingly, effective economic growth strategies should integrate technological advancement with carefully designed institutional reforms to ensure sustained and inclusive productivity gains over the long term.

Financial–Economic Nexus of Health Investment, Productivity, and Growth

Theme 4 explores the integrated nexus between health investment, labour productivity, and economic growth within a broader financial, economic, and environmental context. Empirical evidence indicates that these relationships are not linear but are instead dynamically interdependent and mutually reinforcing. Sarwar et al. (2019) highlight a bidirectional relationship between health, education, and economic growth at the global level, whereby improved health outcomes enhance labour productivity, which in turn contributes to stronger economic growth. Similarly, Woji (2024) finds that public health expenditure plays a significant role in economic development, primarily through improvements in workforce efficiency and human capital accumulation. These findings suggest that health investment functions not only

as a direct input into productivity but also as an indirect driver of macroeconomic performance.

Further evidence underscores the importance of sustainability and efficiency within this nexus. Sungur et al. (2024), using high-frequency data from the COVID-19 period, demonstrate the resilience function of health investment, showing that health capital contributes to stabilising economic performance during crisis conditions. Moreover, Anwar et al. (2022) conclude that environmental degradation is linked to increased health care costs in developing nations, further emphasizing the interdependence of environmental sustainability and the economic impact of public health management. Collectively, these studies illustrate that the health–productivity–growth relationship is multidimensional, context-dependent, and shaped by interactions between public finance, environmental factors, and institutional effectiveness. This supports the need for integrated policy frameworks that align health investment with broader economic and sustainability objectives.

Overall, the literature conceptualises health investment, productivity, and economic growth as components of a complex system rather than isolated variables. In this framework, health spending operates simultaneously as an input, a transmission channel, and a long-term determinant of economic growth. The economic impact of health investment therefore depends not only on its direct productivity effects but also on the efficiency of financial allocation, complementarities with sectors such as education and the environment, and the institutional structures governing these interactions. This integrated perspective helps explain why similar levels of health expenditure can produce divergent economic outcomes across countries, highlighting that effective policy depends on coordinated health, financial, and structural alignment rather than spending alone.

DISCUSSION

Summary of the Key Findings

The findings of this study indicate that health investment constitutes a strategic economic input with measurable but context-dependent effects on labour productivity and long-run economic growth. Rather than exhibiting a uniform relationship, the evidence suggests heterogeneous returns to health expenditure, with outcomes varying according to the efficiency of resource allocation and the effectiveness of implementation mechanisms. While improvements in population health generally enhance productive capacity through reduced absenteeism, increased labour participation, and strengthened human capital formation, these benefits are not automatic and are strongly conditioned by institutional quality and spending efficiency. Importantly, the results highlight that the health–productivity–growth nexus operates as a multidimensional system influenced by complementary factors such as education, infrastructure development, and financial system maturity. This

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

implies that the economic returns to health investment are significantly amplified when embedded within integrated policy frameworks rather than treated as isolated interventions. Furthermore, linkages with technological progress and sustainability considerations suggest that health investment also contributes to enhancing economic resilience and shaping long-term development trajectories. From a policy perspective, the findings underscore the need to shift attention from the mere scale of health expenditure towards its quality, efficiency, and integration within broader economic strategies.

Interpretation of the Findings

The implications of these findings suggest that health investment should not be viewed merely as social expenditure, but rather as a productive economic investment within the broader human capital framework. The observed positive relationship between health spending and productivity underscores the role of improved health in enhancing both the physical and cognitive capacities of the workforce. However, the relationship is conditional, indicating that health investment alone is insufficient to ensure sustained economic growth. Its effectiveness depends on the efficiency of resource allocation, the quality of governance, and its integration with complementary sectors. The results further suggest the presence of both multiplicative effects and diminishing returns, particularly in developed economies where additional increases in health expenditure may generate progressively smaller productivity gains. In addition, the interaction between financial mechanisms and health investment highlights the mediating role of institutional structures and policy design, which ultimately determine whether health spending translates into tangible economic benefits.

Comparison with Previous Research

These results are consistent with Human Capital Theory (Schultz, 1961), which posits that investment in health and education generates returns through enhanced labour productivity and improved economic performance. Similar evidence is reported by Ye and Zhang (2018) and Beylik et al. (2022), both of whom confirm a generally positive relationship between health expenditure and economic growth. However, this study extends prior work by emphasising the context-specific and conditional nature of this relationship. In contrast to earlier deterministic models, more recent studies (Adegoke et al., 2022); Wang and Chen (2021) highlight the role of inefficiencies, institutional heterogeneity, and diminishing returns, patterns that are also reflected in the present findings. Furthermore, the integration of financial and environmental perspectives aligns with emerging literature (Anwar et al., 2022; Sungur et al., 2024), which underscores the importance of sustainability considerations and cross-sectoral linkages in shaping economic growth dynamics.

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

Significance of the Study

The findings carry important implications for policymakers and economic planners. First, they suggest a shift away from quantity-focused health spending towards efficiency-driven strategies that prioritise equitable and effective resource allocation. This involves improving the targeting of expenditures to ensure better health and economic outcomes per unit of spending. Second, the results highlight the importance of integrated policy frameworks in which health investment is coordinated with investments in education, infrastructure, and financial development. Such cross-sectoral alignment is essential for maximising productivity gains and strengthening long-term economic performance. Additionally, the evidence indicates that the returns on health investment are strongly influenced by institutional quality and governance effectiveness. In developing economies, strengthening institutional capacity and reducing systemic inefficiencies should be a key policy priority to enhance the productivity and growth effects of health spending. Finally, the study contributes to the broader discourse on sustainable development by reinforcing the view that health investment is a critical determinant of long-term economic resilience and growth, especially in the context of global shocks such as pandemics.

Strengths / Contributions

The relevance of this study lies in its use of a SLR methodology guided by the PRISMA framework, which ensures transparency, methodological rigour, and reproducibility. By synthesising findings from multiple contexts, the study provides a multi-contextual and interdisciplinary understanding of the relationship between health investment, labour productivity, and economic growth. A further key contribution is the development of a thematic framework encompassing financial, institutional, and macroeconomic dimensions. This integrated structure offers a more comprehensive perspective on the health–productivity–growth nexus. In addition, the study addresses a notable gap in the literature by foregrounding the financial–economic aspects of health investment, particularly issues related to efficiency, resource distribution, and sustainability.

Brief Summary

In conclusion, this research establishes that health investment plays a significant role in enhancing labour productivity and economic growth; however, its effects are highly context-dependent and mediated through institutional and financial conditions. While the findings are broadly consistent with Human Capital Theory, they also demonstrate the need for more integrated and context-sensitive policy approaches that account for structural heterogeneity and implementation constraints. Overall, the study contributes to a clearer understanding of how strategic investment in the health sector can support sustainable economic growth. It also identifies important directions for future

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

research, particularly in relation to the financial–economic mechanisms, institutional variability, and efficiency-related dimensions of health investment outcomes.

CONCLUSION

This paper provides a detailed examination of the financial–economic nexus between health investment, labour productivity, and economic growth, supporting the argument that health expenditure is a critical determinant of sustainable economic development. The findings indicate that improvements in workforce efficiency, reductions in absenteeism, and stronger human capital formation collectively translate into higher productivity and long-term economic growth. However, the results also demonstrate that this relationship is neither linear nor automatic. Its strength depends on institutional quality, efficiency in resource allocation, and the presence of complementary investments such as education and infrastructure. The thematic synthesis further reveals that financial mechanisms, technological progress, and environmental factors interact with health investment to shape broader economic outcomes. Importantly, the study reframes health expenditure as a strategic economic investment rather than merely a form of social spending. Overall, it contributes to the literature by proposing an integrated framework linking health systems and macroeconomic performance, underscoring the need for policy designs that maximise returns on health investment and support inclusive and sustainable economic development.

LIMITATIONS

The study has several limitations despite its contributions. First, it is based on a qualitative systematic literature review, which restricts its ability to establish causal relationships or empirically validate the observed associations. Second, the relatively small number of studies included in the final synthesis may limit the generalisability of the conclusions. Third, the analysis relies primarily on secondary and aggregate-level data, which may not capture micro-level dynamics or country-specific variations in the relationship between health investment, labour productivity, and economic growth. In addition, the study does not explicitly address endogeneity concerns, nor does it quantify the strength of relationships between variables, which limits the precision of its analytical outcomes. Finally, the validity of comparative interpretations and the robustness of policy implications may be constrained by inconsistencies in the methodologies and contextual settings of the reviewed studies.

FUTURE DIRECTIONS

Future research should adopt quantitative and mixed method approaches to validate and extend the findings of this study. In particular, the use of panel data techniques, causal inference methods, and advanced econometric models such as Generalised

Method of Moments (GMM) or threshold regression models would provide stronger evidence on the causal mechanisms linking health investment, labour productivity, and economic growth. Further research should also explore nonlinear relationships, threshold effects, and regional heterogeneity, particularly by distinguishing between developing and developed economies. Incorporating micro-level data would be especially valuable in capturing distributional effects and workforce-specific dynamics that are not visible in aggregate analyses. In addition, future studies could examine the comparative impact of digital health technologies and financial innovations in improving efficiency and productivity outcomes. Greater attention should also be given to sustainability considerations, particularly the intersection between health investment, environmental change, and climate-related economic impacts, to better understand long-term development trajectories.

REFERENCES

Adegoke, Y. O., George, G., & Mbonigaba, J. (2022). Sustainable thresholds, health outcomes, health expenditures and education nexus in selected African countries: quadratic and moderation modelling. *Globalization and Health*, *18*(1), 84. https://doi.org/10.1186/s12992-022-00876-8

Aldrickzler, R., Saadoon, M. Y., Kawad, R. T., & Chornomordenko, I. (2025). Transforming human capital for the digital age: industry 4.0 and 5.0. *Encuentros. Revista de Ciencias Humanas, Teoría Social y Pensamiento Crítico.*(23 (enero-abril)), 438-455. https://doi.org/10.5281/zenodo.14291566

Badmus, J. O., Raifu, I. A., & Balogun, O. S. (2026). Exploring the Role of Institutional Quality in the Crowding-Out Effect of Military Expenditure on Health Expenditure and Outcomes in Africa. *Peace Economics, Peace Science and Public Policy*, *32*(1), 25-58. https://doi.org/10.1515/peps-2025-0019

Beylik, U., Cirakli, U., Cetin, M., Ecevit, E., & Senol, O. (2022). The relationship between health expenditure indicators and economic growth in OECD countries: A Driscoll-Kraay approach. *Frontiers in public health*, *10*, 1050550. https://doi.org/10.3389/fpubh.2022.1050550

Bonzini, M., Comotti, A., Fattori, A., Serra, D., Laurino, M., Mastorci, F., Bufano, P., Ciocan, C., Ferrari, L., Bollati, V., & Di Tecco, C. (2023). Promoting health and productivity among ageing workers: a longitudinal study on work ability, biological and cognitive age in modern workplaces (PROAGEING study). *BMC Public Health*, *23*(1), 1115. https://doi.org/10.1186/s12889-023-16010-1

Brikci, N., Alao, R., Wang, H., Erlangga, D., & Hanson, K. (2024). Improving the efficiency in spending for health: A systematic review of evidence. *SSM - Health Systems*, *2*, 100008. https://doi.org/10.1016/j.ssmhs.2024.100008

Chen, C. (2020). Capital-skill complementarity, sectoral labor productivity, and structural transformation. *Journal of Economic Dynamics and Control*, *116*, 103902. https://doi.org/10.1016/j.jedc.2020.103902

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 417-439) **Doi:** 10.34109/ijefs.2026180120

Chen, F., & Chen, Z. (2021). Cost of economic growth: Air pollution and health expenditure. *Science of The Total Environment*, *755*, 142543. https://doi.org/10.1016/j.scitotenv.2020.142543

Guo, T., Tong, Y., & Yu, Y. (2025). The influence of government health investment on economic resilience: A perspective from health human capital. *International Review of Economics & Finance*, *99*, 104050. https://doi.org/10.1016/j.iref.2025.104050

Ha, N. M., Hoang Ngoc, B., & Huynh Mai Tram, N. (2025). Does digital transformation reinforce labor productivity and income in Vietnam? Evidence from quantile on quantile approach. *Cogent Economics & Finance*, *13*(1), 2587500. https://doi.org/10.1080/23322039.2025.2587500

Hu, Q., & Wang, L. (2024). Economic growth effects of public health expenditure in OECD countries: An empirical study using the dynamic panel threshold model. *Heliyon*, *10*(4), e25684. https://doi.org/10.1016/j.heliyon.2024.e25684

Anwar, A., Hyder, S., Bennett, R., & Younis, M. (2022). Impact of Environmental Quality on Healthcare Expenditures in Developing Countries: A Panel Data Approach. *Healthcare, 10*(9), 1608‑1608. https://doi.org/10.3390/healthcare10091608

Hussien, H. H., Hagabdulla, N. H., Ahmed, K. M. Y., Albadwi, F. I. A., & Alotaibi, K. N. (2025). The impact of economic growth on public health and well-being: An empirical analysis of Saudi Arabia. *Journal of Open Innovation: Technology, Market, and Complexity*, *11*(2), 100564. https://doi.org/10.1016/j.joitmc.2025.100564

Cabañero-Garcia, E., Martinez-Lacoba, R., Pardo-Garcia, I., & Amo-Saus, E. (2025). Barriers to health, social and long-term care access among older adults: a systematic review of reviews. *International Journal for Equity in Health, 24*(1), 72‑72. https://doi.org/10.1186/s12939-025-02429-y

Kanval, N., Ihsan, H., Irum, S., & Ambreen, I. (2024). Human Capital Formation, Foreign Direct Investment Inflows, and Economic Growth: A Way Forward to Achieve Sustainable Development. *Journal of Management Practices Humanities and Social Sciences*, *8*(3). https://doi.org/10.33152/jmphss-8.3.5

Kwilinski, A., & Vysochyna, A. (2024). Efficiency of healthcare financing: Case of European countries. *International Journal of Financial Studies*, *12*(3), 87. https://doi.org/10.3389/fpubh.2024.1454699

Liu, Y., & Huo, S. (2024). Measurement of health human capital and its economic effect in China. *Humanities and Social Sciences Communications*, *11*(1), 774. https://doi.org/10.1057/s41599-024-03060-y

Magida, N., Ncanywa, T., Sibanda, K., & Asaleye, A. J. (2025). Human Capital Development and Public Health Expenditure: Assessing the Long-Term Sustainability of Economic Development Models. *Social Sciences*, *14*(6), 351. https://doi.org/10.3390/socsci14060351

Mariev, O., Turkanova, S. V., & Mamman, S. O. (2025). Labor productivity and the

role of labor market deregulation: Are there limits? Evidence from BRICS. *Journal of Policy Modeling*, *47*(6), 1264-1283. https://doi.org/10.1016/j.jpolmod.2025.09.002

Onofrei, M., Vatamanu, A.-F., Vintilă, G., & Cigu, E. (2021). Government Health Expenditure and Public Health Outcomes: A Comparative Study among EU Developing Countries. *International Journal of Environmental Research and Public Health*, *18*(20), 10725. https://doi.org/10.3390/ijerph182010725

Pariboni, R., & Tridico, P. (2020). Structural change, institutions and the dynamics of labor productivity in Europe. *Journal of Evolutionary Economics*, *30*(5), 1275-1300. https://doi.org/10.1007/s00191-019-00641-y

Wang, F. (2015). More Health Expenditure, Better Economic Performance? Empirical Evidence From OECD Countries. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing, 52*, 004695801560266. https://doi.org/10.1177/0046958015602666

Rojas-Sánchez, M. A., Palos-Sánchez, P. R., & Folgado-Fernández, J. A. (2022). Systematic literature review and bibliometric analysis on virtual reality and education. *Education and Information Technologies*, *28*(1), 155-192. https://doi.org/10.1007/s10639-022-11167-5

Sarwar, S., Alsaggaf, M. I., & Tingqiu, C. (2019). Nexus among economic growth, education, health, and environment: dynamic analysis of world-level data. *Frontiers in public health*, *7*, 307. https://doi.org/10.3389/fpubh.2019.00307

Schultz, T. W. (1961). Investment in human capital. *The American economic review*, *51*(1), 1-17. https://www.jstor.org/stable/1818907

Shanta, N. A., & Adedokun, M. W. (2025). Assessing the Influence of Economic and Environmental Transformation Drivers on Social Sustainability in Ten Major Coal-Consuming Economies. *Sustainability*, *17*(17), 7849. https://doi.org/10.3390/su17177849

Sorensen, G., Dennerlein, J. T., Peters, S. E., Sabbath, E. L., Kelly, E. L., & Wagner, G. R. (2021). The future of research on work, safety, health and wellbeing: A guiding conceptual framework. *Social Science & Medicine*, *269*(1), 113593. https://doi.org/10.1016/j.socscimed.2020.113593

Sungur, N. C., Akdoğan, E. C., & Gökten, S. (2024). Health Capital and a Sustainable Economic-Growth Nexus: A High-Frequency-Data Analysis during COVID-19. *Sustainability*, *16*(10), 3898. https://doi.org/10.3390/su16103898

Sunny, F. A., Jeronen, E., & Lan, J. (2025). Influential Theories of Economics in Shaping Sustainable Development Concepts. *Administrative Sciences*, *15*(1), 6. https://doi.org/10.3390/admsci15010006

Ernawati, E., Mawardi, F., Roswiyani, R., Melissa, M., Wiwaha, G., Tiatri, S., & Hilmanto, D. (2022). Workplace wellness programs for working mothers: A systematic review. *Journal of Occupational Health, 64*(1). https://doi.org/10.1002/1348-9585.12379

Wang, F., & Wang, J.-D. (2021). Investing preventive care and economic development in ageing societies: empirical evidences from OECD countries. *Health Economics Review*, *11*(1), 18. https://doi.org/10.1186/s13561-021-00321-3

Wang, L., & Chen, Y. (2021). Determinants of China's health expenditure growth: based on Baumol's cost disease theory. *International Journal for Equity in Health*, *20*(1), 213. https://doi.org/10.1186/s12939-021-01550-y

Woji, M. T. (2024). Public health expenditure and economic development nexus: evidence from Nigeria. *International Journal of Economic, Commerce and Management*, *12*(7), 1953. https://www.researchgate.net/profile/Emmanuel-Samuel-Udo/publication/382689558

Ye, L., & Zhang, X. (2018). Nonlinear Granger Causality between Health Care Expenditure and Economic Growth in the OECD and Major Developing Countries. *International Journal of Environmental Research and Public Health*, *15*(9), 1953. https://doi.org/10.3390/ijerph15091953

Zhang, D., Mohsin, M., Rasheed, A. K., Chang, Y., & Taghizadeh-Hesary, F. (2021). Public spending and green economic growth in BRI region: Mediating role of green finance. *Energy Policy*, *153*, 112256. https://doi.org/10.1016/j.enpol.2021.112256

Zhou, M. (2025). Equity of total health expenditure in China, 2015–2021. *Scientific Reports*, *15*(1), 44572. https://doi.org/10.1038/s41598-025-28366-y