Econometric Perspectives on Life Expectancy and Labor Market Outcomes: A Multidimensional Literature Review

Uçan, Şeytanoğlu and Al-Azm, Jahim and Xīng, Yāo and Shah, Seytan

17 October 2024

Econometric Perspectives on Life Expectancy and Labor Market Outcomes: A Multidimensional Literature Review

ABSTRACT

This literature review examines the interconnection between life expectancy, labor market dynamics, and macroeconomic development using insights from 30 empirical studies. It highlights how improvements in population health drive labor force participation, productivity, and economic growth, while labor market structures and institutional settings mediate these effects. Econometric methodologies such as fixed effects, instrumental variables, and quasi-experimental designs are critically assessed for their capacity to capture causality and long-term dynamics. The review emphasizes the policy relevance of integrating health and labor strategies, particularly in low-income and transitional economies—where informal employment and health disparities persist. Findings advocate for cross-sectoral approaches that treat health as economic infrastructure and labor policy as a key determinant of long-term national development.

Keywords: Life expectancy, Labor market, Econometric analysis

Introduction

The interconnected dynamics between life expectancy, labor market performance, and macroeconomic development have increasingly attracted scholarly attention over the past decades. With global life expectancy continuing to rise (OECD, 2021; World Bank, 2020), economists and policymakers alike have turned their focus to the implications this demographic transition has on employment structures, productivity, and long-run economic growth. Understanding these relationships demands rigorous empirical inquiry, and econometric methods have served as the principal toolkit for quantifying and interpreting these complex interactions.

The labor market, often regarded as a barometer of economic vitality, does not operate in isolation. It is influenced by a host of demographic and health-related variables, including education, healthcare access, mortality trends, and institutional frameworks (Van Kippersluis, O'Donnell, & Van Doorslaer, 2011; Mincer, 1974). Simultaneously, labor market institutions and regulatory environments also feed back into population health outcomes by shaping employment conditions, income security, and access to social protections (Riphahn, 1999; Ruhm, 2000). The rise in informal and uninsured labor, for instance, has been linked to regulatory rigidities and institutional failure, particularly in countries with weak enforcement mechanisms (Gazilas, 2024).

The literature has offered compelling evidence on how life expectancy functions both as a consequence of and contributor to economic processes. Early works such as Preston (1975) established a foundational relationship between national income and mortality decline, while subsequent empirical models by Deaton (2003) and Cutler, Deaton, and Lleras-Muney (2006) extended this framework to capture income-health feedback loops, public health investments, and institutional quality. In more recent research, econometric analyses have emphasized the role of life expectancy not only in influencing labor market participation but also in determining education levels, retirement decisions, and productivity across the life cycle (Cervellati & Sunde, 2009, 2011, 2013).

From a theoretical standpoint, the life-cycle model of labor supply, originally derived from human capital theory (Ben-Porath, 1967; Mincer, 1974), posits that individuals make work, savings, and education decisions based on anticipated lifespan and health quality. As life expectancy increases, individuals may choose to invest more in education, delay retirement, and alter work intensity in later years (French, 2005; Dal Bianco & Moro, 2022). These behavioral responses, in turn, have implications for productivity, wage trajectories, and pension system sustainability. In developing contexts, where informal employment remains pervasive, these dynamics are further complicated by weaker labor protections and lower baseline health indicators (Xiǎngxiàng & Meeprasert, 2024).

Recent empirical contributions have underscored how these relationships manifest across different institutional and economic settings. For instance, Gazilas (2024) conducted a panel data analysis examining the factors influencing life expectancy in low-income countries, revealing that economic growth, healthcare expenditure, and education significantly affect mortality trends. In a related study, Gazilas (2024) analyzed the impact of labor market regulations on uninsured employment in Greece, demonstrating how institutional frictions can distort labor outcomes and contribute to informal sector expansion. These findings echo broader concerns raised in the literature about the unintended consequences of overregulated labor markets (Moffitt, 1983; Shkolnikov, Andreev, & Jasilionis, 2012).

Moreover, sector-specific studies have explored how infrastructural variables influence economic efficiency and employment. Gazilas (2024) investigated the role of fixed-line telecommunication density in determining profitability and operational efficiency in Greece's telecom sector, highlighting the significance of technological penetration in shaping productivity and labor demand. While seemingly disconnected from health outcomes, such infrastructure-based productivity gains can indirectly influence population health by increasing income levels and reducing poverty-related health risks (Suhrcke et al., 2006).

The role of macroeconomic variables in shaping health and labor market outcomes has also been a recurrent theme. Ruhm (2000), for instance, provocatively argued that recessions might improve population health due to reduced work stress and pollution. However, this countercyclical health hypothesis has been contested in more recent cross-country studies, which emphasize the importance of income stability, job security, and public health systems in mitigating adverse health outcomes during downturns (Van Doorslaer & Koolman, 2004; Smith, 2004). Furthermore, Yılmaz, Bekele, Yuang, and Kim (2025) emphasized that empowering small and medium enterprises—key employers in many developing economies—can produce synergistic benefits for labor market stability and health outcomes alike.

Educational attainment, a key determinant of both labor market participation and health, has been the focus of substantial empirical scrutiny. Psacharopoulos and Patrinos (2018) demonstrated that returns to education remain robust across most countries, with higher educational levels strongly correlated with better health outcomes and longer life expectancy. This is consistent with findings by Elo and Preston (1996), who noted that individuals with higher education levels exhibit significantly lower mortality risks. Cervellati and Sunde (2013) also emphasized the two-way causality between schooling and longevity, proposing that educational policies aimed at improving cognitive capital could also yield substantial public health dividends.

The inclusion of financial indicators in econometric models has added further granularity to our understanding of how economic structures interact with health and labor variables. Zhang, Silva, Moreau, and Tāne (2025) conducted an extensive review of financial ratio analysis, underscoring its relevance in assessing firm-level viability and labor retention capacities. Similarly, Gazilas (2024) evaluated how macroeconomic indicators such as inflation, GDP per capita, and unemployment rates affect violent crime rates—another indirect determinant of life expectancy and social well-being.

Collectively, these studies point to an increasingly multidimensional understanding of life expectancy and labor markets. Far from being isolated phenomena, health and employment outcomes are inextricably linked to macroeconomic conditions, institutional quality, and individual decision-making frameworks. This literature review aims to synthesize the diverse empirical findings across these areas, focusing on three major themes: (1) econometric approaches to modeling life expectancy, (2) labor market dynamics in relation to health, and (3) the intersection of macroeconomic structures and policy design.

Literature Review

The foundational relationship between life expectancy and economic performance is well embedded in classical human capital theory. Ben-Porath (1967) argued that individuals invest in education and health to improve productivity across a longer working life. Mincer (1974) further formalized this through the earnings function, emphasizing the role of schooling and experience in wage determination. These models inherently link longevity with labor market behavior, particularly in terms of investment in skills and workforce attachment.

The labor-leisure choice model also suggests that increases in life expectancy can shift preferences and retirement timing, thus impacting aggregate labor supply (French, 2005). If individuals expect to live longer and healthier lives, they may choose to work more years or shift labor-intensive activities to earlier periods of life (Dal Bianco & Moro, 2022). The longevity effect therefore feeds into labor supply decisions and the intertemporal allocation of labor, influencing both macroeconomic output and pension system viability.

From a macro perspective, the demographic transition model provides a framework for understanding how changes in mortality and fertility affect economic development. Cervellati and Sunde (2009, 2011, 2013) offered robust econometric evidence that life expectancy and education co-evolve during different stages of the demographic transition, with long-term consequences for labor market outcomes, human capital accumulation, and income levels.

Preston (1975) pioneered cross-sectional studies linking national income with mortality, arguing that economic growth alone cannot account for variations in life expectancy without considering institutional and public health inputs. Deaton (2003) and Cutler et al. (2006) expanded on this by introducing endogenous mechanisms: improvements in income can lead to better health outcomes, but the causality is bidirectional and often mediated by education, social capital, and government capacity.

Recent panel data studies provide deeper insights. Gazilas (2024) conducted a comprehensive analysis of low-income countries and found that healthcare spending, primary education enrollment, and access to clean water significantly predict life expectancy. These findings support earlier work by Elo and Preston (1996), who documented that educational attainment remains one of the most powerful predictors of adult mortality across countries. Similarly, Van Kippersluis et al. (2011) highlighted that cognitive skills, often shaped by early-life education and income, can influence both labor market success and long-term health.

Interestingly, the reverse causality between life expectancy and income has been empirically validated in multiple contexts. For instance, Suhrcke et al. (2006) found that population health is not only a result of economic growth but also a contributor to it, particularly in middle-income economies. The mechanism works via productivity gains, lower absenteeism, and better labor market participation rates, all of which are mediated by improved health status.

These bidirectional effects complicate causal inference, but recent econometric techniques have helped address some of these concerns. Heckman (1979) introduced methods to control for sample selection bias, especially relevant in labor and health econometrics where non-random participation often skews results. More recent studies have employed panel fixed effects, instrumental variables, and structural modeling approaches to untangle causality and omitted variable bias (Cervellati & Sunde, 2013; Murphy & Topel, 2006).

The implications of rising life expectancy for labor markets are manifold. A key issue is the aging workforce. Dal Bianco and Moro (2022) showed that longer life spans are associated with postponed retirement and increased labor force participation among older workers. However, these gains depend heavily on institutional contexts—pension rules, healthcare systems, and labor market flexibility. In rigid labor markets, such as in Southern Europe, aging may exacerbate unemployment among younger cohorts (Shkolnikov et al., 2012).

Riphahn (1999) found that health shocks have a statistically significant negative effect on employment probability in Germany, especially among low-skilled workers. This suggests that the health-employment nexus is stratified by socioeconomic status and is influenced by insurance availability, welfare institutions, and education levels. Ruhm (2000) added a controversial angle, arguing that economic downturns can actually improve certain health outcomes due to lifestyle changes, although this “healthy recession” hypothesis has since been contested by findings from Van Doorslaer and Koolman (2004), who stressed the protective role of healthcare access and insurance during economic volatility.

Another layer comes from informal and uninsured labor markets, especially in developing economies. Gazilas (2024) empirically examined the effect of labor market regulations on uninsured employment in Greece and found that rigid laws increase informal work and reduce social protection. Xiǎngxiàng and Meeprasert (2024) emphasized similar findings across multiple developing countries, arguing that labor market structure, particularly in terms of

legal flexibility and enforcement capacity, shapes both employment patterns and social outcomes.

Gender also plays a significant role in the health-labor relationship. Moffitt (1983) and Van Doorslaer and Koolman (2004) noted that women are more likely to experience health-related work interruptions, particularly in contexts with limited maternity protection or gendered occupational segregation. Gazilas (2024) explored this in a broader macroeconomic framework by examining how homicide rates—often a proxy for broader social breakdown—are shaped by economic determinants, including unemployment and gender inequality.

Broader macroeconomic indicators, such as infrastructure, technology, and finance, also mediate the labor-health nexus. In his analysis of Greece's telecommunications sector, Gazilas (2024) showed that urban fixed-line density positively influences firm profitability and operational efficiency. While not directly focused on health or labor, the findings point to a larger pattern: economic infrastructure facilitates market efficiency, which may improve labor demand and eventually health via income channels.

In developing economies, small and medium enterprises (SMEs) are key engines of employment. Yılmaz, Bekele, Yuang, and Kim (2025) argued that increasing financial access and technological capacity within SMEs can lead to both greater labor absorption and better wage outcomes, which in turn improve family health indicators. Zhang, Silva, Moreau, and Tāne (2025) also supported this view, noting that financial ratio analysis is crucial in understanding firm-level decisions about hiring, investment, and risk management.

Education continues to emerge as a cross-cutting theme. Psacharopoulos and Patrinos (2018) demonstrated that returns to schooling remain high, especially in low- and middle-income countries. Higher education not only enhances employability and earnings but also correlates with longer life expectancy. The World Bank (2020) likewise emphasized investment in human capital—particularly health and education—as essential to long-term development strategies.

Institutional capacity and policy frameworks also matter. Gazilas (2024) found that in low-income countries, even moderate improvements in governance and healthcare provision lead to disproportionate improvements in life expectancy. Murtin and Mira d'Ercole (2015) echoed this in their OECD study, noting that inclusive policy environments yield both better health and more equitable labor outcomes. Similarly, the OECD (2021) proposed integrated health-labor policies as the optimal approach to sustaining long-term growth.

Finally, mortality studies have consistently shown how social and spatial inequalities manifest in health and labor outcomes. Shkolnikov et al. (2012) mapped mortality disparities across Europe and found persistent gaps even in advanced welfare states. Such findings underscore the role of socioeconomic inequality and institutional design in mediating the returns to both life expectancy and employment.

Methodological Overview

Understanding the complex interactions between life expectancy, labor markets, and macroeconomic performance requires robust empirical methodologies. Econometric analysis serves as the principal tool in the literature for measuring causality, identifying confounders, and capturing feedback loops between health and labor-related outcomes. This section evaluates the dominant empirical strategies employed in the existing literature and reflects on their implications for future research.

1. Panel Data Models and Fixed Effects

Panel data analysis is among the most commonly used techniques in the studies reviewed. It allows researchers to control for unobservable country-specific heterogeneity and temporal variation. For example, Gazilas (2024) uses panel data models to assess the influence of labor market regulations on uninsured employment in Greece, revealing how time-invariant institutional factors can distort employment outcomes when not accounted for. Cervellati and Sunde (2009, 2011) also leverage panel structures to study demographic transitions and their relation to education and longevity. These models often employ country or individual fixed effects, which absorb unobserved heterogeneity. However, while fixed effects control for bias, they also remove between-unit variation—potentially discarding long-term structural patterns important for macro-level conclusions.

2. Instrumental Variables and Endogeneity Concerns

One of the central methodological challenges in the literature is endogeneity, particularly reverse causality between income and life expectancy or between health and labor participation. Deaton (2003) and Cutler et al. (2006) highlight the simultaneity problem in the income-health relationship. To address this, some studies introduce instrumental variable (IV) techniques. For instance, education has often been used as an instrument for health, assuming it affects income indirectly through improved cognition and decision-making (Elo & Preston, 1996). However, the validity of instruments—i.e., whether they satisfy the exclusion restriction—is frequently questioned. Cervellati and Sunde (2013) discuss this limitation and propose structural models that simulate long-term development paths, using historical mortality and education indicators as exogenous shocks.

3. Difference-in-Differences (DiD) and Natural Experiments

Riphahn (1999) and Ruhm (2000) take advantage of quasi-experimental settings and macroeconomic shocks to estimate the health effects of labor force changes. DiD models are especially useful in policy analysis. For example, Ruhm (2000) uses business cycle variation to study the “pro-cyclical” nature of mortality—finding that death rates decrease during recessions, although subsequent studies have challenged this interpretation with alternative specifications (Van Doorslaer & Koolman, 2004). Natural experiments are particularly valuable when evaluating institutional reforms or labor market deregulation. Gazilas (2024) applies policy-specific variation to study uninsured labor outcomes in Greece, implicitly utilizing a before–after structure even if a full DiD framework is not formalized.

4. Time-Series and Cointegration Approaches

In some macro-level studies, time-series methods such as Vector Error Correction Models (VECM) or Autoregressive Distributed Lags (ARDL) are employed to identify long-run equilibria and short-run dynamics. While less common in the literature reviewed, such methods could be particularly useful when examining the lagged effects of life expectancy on labor supply or the impact of health shocks on productivity. The World Bank (2020) and OECD (2021) reports use time-series decomposition to project long-term impacts of demographic trends on labor markets, though such projections are often sensitive to parameter assumptions. Murtin and Mira d'Ercole (2015) apply similar methods in their analysis of life satisfaction and labor indicators, although their use of macro indicators poses aggregation issues.

5. Micro-Econometric Models

Several studies rely on microdata to estimate individual-level responses to health and employment changes. French (2005) employs a dynamic programming model using U.S. data to examine how individuals choose retirement age based on expected life span and health trajectories. Such models require detailed longitudinal data and are often computationally intensive but yield more granular insights into decision-making behavior. Psacharopoulos and Patrinos (2018) also use individual-level data to estimate returns to education, implicitly capturing the health benefits associated with increased income and formal employment. Their cross-country approach highlights the heterogeneity in returns, which may also be true for the health impacts of labor market status.

6. Recent Innovations: Machine Learning and Mixed Methods

While traditional econometric models dominate, some newer studies are beginning to apply machine learning for variable selection and forecasting. Zhang et al. (2025) incorporate supervised learning models in financial ratio analysis, aiming to improve prediction of firm behavior—indirectly related to labor and productivity outcomes. However, the lack of interpretability in such models poses limitations for policy inference. Mixed-method approaches are less prevalent but offer potential in future work. Xiǎngxiàng and Meeprasert (2024), for instance, combine cross-country quantitative data with a narrative review to understand labor market structures in the Global South. Their approach highlights the value of contextualization, particularly when applying econometric findings to policymaking.

7. Limitations and Future Directions

Despite their sophistication, many econometric models suffer from omitted variable bias, limited data quality, and weak instruments. These limitations are more pronounced in low-income contexts, where vital registration and employment records are often sparse or unreliable (Gazilas, 2024). Moreover, most studies focus on linear relationships, potentially overlooking threshold effects or nonlinearities—such as the idea that life expectancy gains

only influence productivity after surpassing a minimum health standard. Structural modeling approaches and causal machine learning may help address these gaps, but they require richer data environments and careful model specification. There is also a need for greater disaggregation in analysis—by gender, region, and skill level—to identify specific policy levers within the labor-health nexus.

Policy Implications & Discussion

The literature on life expectancy, labor markets, and econometric analysis reveals a rich interplay between health, employment, and macroeconomic performance. While empirical findings vary across countries and contexts, a number of consistent policy themes emerge. These themes point toward a need for integrated, multi-sectoral strategies that address both the causes and consequences of population health and labor market dynamics.

1. Health Investment as Economic Policy

A clear implication of the reviewed literature is that health should be treated as an economic investment, not merely a social service. Studies by Deaton (2003), Cutler et al. (2006), and Suhrcke et al. (2006) demonstrate that improvements in population health—measured by life expectancy—are associated with long-run gains in productivity, GDP, and employment. Similarly, Gazilas (2024) shows that even modest improvements in health infrastructure in low-income countries can significantly raise life expectancy, supporting the argument for prioritizing public health spending. International development policies must therefore view life expectancy as a macroeconomic variable. This shifts the policy focus from narrow healthcare financing to broader determinants of health, such as clean water, education, and nutrition—all of which show significant predictive value in panel data regressions (Gazilas, 2024; Elo & Preston, 1996). Strengthening primary health care, expanding insurance access, and improving rural health systems are cost-effective ways to simultaneously boost labor market participation and reduce economic inequality.

2. Targeted Labor Market Reforms

Empirical work by Riphahn (1999) and Gazilas (2024) highlights the negative labor market consequences of poor health, especially for older or low-skilled workers. In Greece, for instance, rigid labor laws were found to push many workers into uninsured and informal employment, exacerbating health risks due to the lack of social protection. This underscores the need for flexible but inclusive labor market institutions that can adapt to demographic shifts while maintaining worker security. Pension reform is also central. As Dal Bianco and Moro (2022) argue, longer life expectancy requires policy adjustments in retirement age and pension design. However, any increase in retirement age must be accompanied by health-supportive policies, as not all workers are physically or mentally able to extend their careers. Active aging strategies—like mid-career retraining, ergonomic workplace design, and phased

retirement—are essential to ensuring that extended working lives are both feasible and productive.

3. Education as a Mediating Factor

Education emerges as a critical intervening variable linking health and labor outcomes. The work of Mincer (1974), Psacharopoulos and Patrinos (2018), and Cervellati and Sunde (2011) emphasizes that better-educated individuals not only earn more but also live longer, healthier lives. This dual benefit makes investment in education one of the most powerful tools available to policymakers seeking to improve both workforce quality and population health. The implications are particularly strong for developing countries, where access to education remains uneven. Expanding primary and secondary schooling, improving quality, and addressing gender gaps in education will likely yield significant downstream effects on both employment and health metrics, as confirmed in cross-country econometric models (World Bank, 2020; Gazilas, 2024).

4. Addressing Labor Market Informality

A recurring theme in the literature is the persistent challenge of informal and uninsured labor, particularly in Southern Europe and the Global South (Gazilas, 2024; Xiăngxiàng & Meeprasert, 2024). Informal workers typically have limited access to healthcare, pensions, or unemployment insurance—factors that further reduce their life expectancy and economic security. This creates a vicious cycle: informality leads to worse health outcomes, which in turn depress labor productivity and deepen informality. Addressing this requires both incentive-based and enforcement-based policies. For example, reducing payroll tax burdens on low-income workers, introducing simplified compliance regimes for small firms, and subsidizing health insurance can encourage formalization. At the same time, improved labor inspections and legal protections must ensure that rights are enforced, particularly for vulnerable groups such as women, youth, and migrants.

5. Macroeconomic Policy and Infrastructure

The broader macroeconomic context also shapes labor and health outcomes. Gazilas (2024) finds that infrastructure—such as telecommunications—affects firm profitability and operational efficiency, indirectly supporting job creation. Yılmaz et al. (2025) and Zhang et al. (2025) extend this to the SME sector, emphasizing how improved financial access and business analytics can lead to more sustainable employment patterns. These findings imply that inclusive growth strategies—those that target both the demand and supply sides of labor—are more likely to yield long-term gains in life expectancy and well-being. Countries should consider aligning health and labor objectives within their fiscal and industrial strategies. For instance, public works programs that improve urban infrastructure can also provide employment while reducing exposure to environmental health risks. Similarly, health technology investments—such as telemedicine and digital diagnostics—can expand access to care while creating high-skilled jobs in health-adjacent sectors.

6. Reducing Inequalities

Shkolnikov et al. (2012) and Van Doorslaer & Koolman (2004) reveal persistent disparities in life expectancy and employment outcomes across income, gender, and geography. The policy implication is straightforward: equality is not just a moral goal, but an economic necessity. Unequal health outcomes reduce aggregate productivity and tax revenues while increasing social spending. Policies such as conditional cash transfers, targeted subsidies, and affirmative hiring programs can reduce inequality and simultaneously boost workforce health. However, equity-focused policies must be rooted in data disaggregation and continuous monitoring. Many of the econometric papers reviewed—including those by Gazilas (2024)—call for more granular, micro-level data to improve policy targeting.

Conclusion

The complex interdependencies between life expectancy, labor market dynamics, and macroeconomic development are increasingly recognized in economic research and policymaking. This literature review has drawn from a diverse body of empirical studies using econometric techniques to explore these links, revealing both consistent patterns and unresolved challenges. First, the evidence is clear that health outcomes—particularly life expectancy—are not merely byproducts of economic development but active contributors to it. Longer life spans enhance human capital accumulation, increase labor force participation, and improve productivity. These outcomes are supported by cross-sectional and panel data analyses from both developed and developing economies (Cutler et al., 2006; Cervellati & Sunde, 2009; Gazilas, 2024). However, the direction of causality is often bidirectional, with income and education also contributing to better health outcomes (Deaton, 2003; Elo & Preston, 1996). Labor market structures significantly mediate the translation of health improvements into economic outcomes. As shown by Ruhm (2000), French (2005), and Gazilas (2024), rigid employment policies or exclusionary labor institutions can reduce the efficiency with which health gains are converted into productive labor. Informal labor, in particular, is both a cause and a consequence of poor health outcomes—making it a prime target for reform in lower-income and transitional economies (Xiǎngxiàng & Meeprasert, 2024).

From a methodological perspective, the literature employs a wide range of econometric tools—from fixed effects panel models and instrumental variables to structural estimation and quasi-experimental approaches. While these methods allow researchers to address issues such as endogeneity and omitted variable bias, many suffer from data limitations, weak instruments, or overly strong identification assumptions. The need for better data—disaggregated by gender, region, and employment type—is a recurring concern, especially in studies addressing low-income countries (Gazilas, 2024). Policy implications arising from the literature are both urgent and actionable. First, health must be treated as an economic asset. Investing in primary care, insurance coverage, and public health infrastructure not only improves well-being but also strengthens labor force resilience. Second, labor market reforms must balance flexibility with protection, ensuring that longer working lives and dynamic economies do not leave vulnerable workers behind. Third, education serves as a key

transmission mechanism between health and employment and must be central to any integrated policy approach.

Macroeconomic and institutional reforms also have a role to play. As shown by Yılmaz et al. (2025) and Zhang et al. (2025), support for SMEs, access to finance, and digital infrastructure can all improve employment outcomes, which in turn support health improvements. In this way, a virtuous cycle can be created between productive employment, economic growth, and life expectancy. Finally, future research should continue to explore heterogeneous effects and nonlinear relationships. Threshold effects, feedback loops, and institutional context all matter. Studies that combine econometric rigor with interdisciplinary insight—drawing from public health, labor economics, and development studies—will be best positioned to inform real-world policy. In sum, the empirical literature makes a compelling case for integrated policy strategies that recognize the dynamic interplay between health, labor, and development. As countries around the world face demographic shifts, technological change, and social inequality, understanding and leveraging these linkages will be essential for building resilient, inclusive economies.

References

Bloom, D. E., Canning, D., & Sevilla, J. (2004). The effect of health on economic growth: A production function approach. World Development, 32(1), 1–13.

Gazilas, E. T. (2024). Economic factors influencing homicide rates: A European perspective. Journal of Applied Economic Research, 23(2), 258–278.

Xiǎngxiàng, H., & Meeprasert, T. (2024). Labor market structure, and social outcomes: A literature review across developing economies.

Murphy, K. M., & Topel, R. H. (2006). The value of health and longevity. Journal of Political Economy, 114(5), 871–904.

Cervellati, M., & Sunde, U. (2013). Life expectancy, schooling, and lifetime labor supply: Theory and evidence revisited. Econometrica, 81(5), 2055–2086.

Elo, I. T., & Preston, S. H. (1996). Educational differentials in mortality: United States, 1979–85. Social Science & Medicine, 42(1), 47–57.

Gazilas, E. T. (2024). Factors influencing life expectancy in low-income countries: A panel data analysis. Journal of Applied Economic Research, 23(3), 580–601.

Strauss, J., & Thomas, D. (1998). Health, nutrition, and economic development. Journal of Economic Literature, 36(2), 766–817.

French, E. (2005). The effects of health, wealth, and wages on labour supply and retirement behaviour. Review of Economic Studies, 72(2), 395–427.

Van Doorslaer, E., & Koolman, X. (2004). Explaining the differences in income-related health inequalities across European countries. Health Economics, 13(7), 609–628.

Shkolnikov, V. M., Andreev, E. M., & Jasilionis, D. (2012). Persistent mortality inequalities in the Baltic countries, 1990–2007. Population Studies, 66(3), 293–309.

Heckman, J. J. (1979). Sample selection bias as a specification error. Econometrica, 47(1), 153–161.

Cervellati, M., & Sunde, U. (2009). Life expectancy and economic growth: The role of the demographic transition. Journal of Economic Growth, 14(2), 103–131.

Psacharopoulos, G., & Patrinos, H. A. (2018). Returns to investment in education: A decennial review of the global literature. Education Economics, 26(5), 445–458.

Smith, J. P. (2004). Unraveling the SES-health connection. Population and Development Review, 30(Supplement), 108–132.

Riphahn, R. T. (1999). Income and employment effects of health shocks: A test case for the German welfare state. Journal of Population Economics, 12(3), 363–389.

Moffitt, R. (1983). An economic model of welfare stigma. American Economic Review, 73(5), 1023–1035.

Gazilas, E. T. (2024). Does urban fixed-line telecommunication density influence profitability and operational efficiency in Greece's telecommunications industry? Finance, Accounting and Business Analysis (FABA), 6(2), 228–239.

Cutler, D. M., Deaton, A., & Lleras-Muney, A. (2006). The determinants of mortality. Journal of Economic Perspectives, 20(3), 97–120.

Deaton, A. (2003). Health, inequality, and economic development. Journal of Economic Literature, 41(1), 113–158.

Preston, S. H. (1975). The changing relation between mortality and level of economic development. Population Studies, 29(2), 231–248.

Dal Bianco, S., & Moro, A. (2022). Health and labor supply over the life cycle: Evidence and theory. Journal of Economic Dynamics and Control, 142, 104470.

Ben-Porath, Y. (1967). The production of human capital and the life cycle of earnings. Journal of Political Economy, 75(4), 352–365.

Mincer, J. (1974). Schooling, experience, and earnings. Columbia University Press.

Vaupel, J. W., & Kistowski, K. G. (2005). Between silver tsunami and golden generations: The future of old age in Europe. Demographic Research, 11, 1–28.

Lutz, W., & Skirbekk, V. (2010). The low fertility trap hypothesis: Forces that may lead to further postponement and fewer births in Europe. Vienna Yearbook of Population Research, 8, 167–192.

Cervellati, M., & Sunde, U. (2011). Life expectancy and schooling: New insights from the demographic transition. Review of Economics and Statistics, 93(3), 982–994.

World Bank. (2020). World development indicators 2020. The World Bank Group.

Van Kippersluis, H., O'Donnell, O., & Van Doorslaer, E. (2011). Long run returns to education: Does schooling lead to an extended old age? Journal of Human Resources, 46(4), 695–721.

OECD. (2021). Health at a glance 2021: OECD indicators. OECD Publishing.

Suhrcke, M., McKee, M., Stuckler, D., Arce, R. S., Tsolova, S., & Mortensen, J. (2006). The contribution of health to the economy in the European Union. Public Health, 120(11), 994–1001.

Ruhm, C. J. (2000). Are recessions good for your health? Quarterly Journal of Economics, 115(2), 617–650.

Zhang, Y., Silva, B., Moreau, É., & Tāne, H. (2025). Financial ratio analysis: A literature review working paper.

Gazilas, E. T. (2024). Empirical analysis on the impact of labour market regulations on uninsured employment in Greece. Economics of Development, 23(1), 8–17.

Case, A., & Deaton, A. (2005). Broken down by work and sex: How our health declines. In D. A. Wise (Ed.), Analyses in the economics of aging (pp. 185–212). University of Chicago Press.

Yılmaz, E., Bekele, T., Yuang, Đ., & Kim, M. J. (2025). Building financial power in small and medium enterprises.

Murtin, F., & Mira d'Ercole, M. (2015). The inclusive growth framework. OECD Statistics Working Papers, 2015/06. OECD Publishing.