



Available Online

Journal of Education and Social Studies

ISSN: 2789-8075 (Online), 2789-8067 (Print)

<http://www.scienceimpactpub.com/jess>

ROLE OF ECONOMIC GROWTH AND GOVERNMENT HEALTH EXPENDITURES IN DETERMINING LIFE EXPECTANCY IN SELECTED ASIAN COUNTRIES

Fouzia^{1,*}, Mehwish Siddique² and Anam Altaf¹

¹Department of Economics, Govt. Graduate College for Women Satellite Town Gujranwala, Pakistan

²Department of Biology, Govt. Graduate College for Women Satellite Town Gujranwala, Pakistan

ABSTRACT

Life expectancy is indispensable to Asian countries that are endeavoring to attain socioeconomic development completely by making many investments in the health and education sectors. Current research focuses on determinants of life expectancy in selected Asian economies by using panel data from 15 nations. Fixed effect results highlight that domestic general government health expenditures, economic growth, and urban population are contributing to improved life expectancy at birth. However, the unemployment rate seems to be deteriorating the life expectancy at birth in these Asian economies. The Governments of these economies must provide more educational and health facilities along with job chances to the general people. Moreover, health and educational expenditures must be the maximum share of GDP in these economies.

Keywords: Health expenditures; Urban population; Life expectancy; Asian countries.

** Email: fouziafahadeco@gmail.com*

© The Author(s) 2024.

<https://doi.org/10.52223/jess.2024.5210>

Received: December 28, 2023; Revised: March 21, 2024; Accepted: April 17, 2024

This is an open-access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

INTRODUCTION

In these times, the interlink between the environment, energy, and health got much attention because of their considerable influence on the health of humans. It is almost certainly one of the majority significant indicators of a nation's happiness (Ho & Hendi, 2018), a proxy for health that was defined as "a state of comprehensive corporal, mental and societal welfare and not just the nonappearance of sickness or susceptibility" (WHO, 2006). Life expectancy; certainly, recognizes and assesses the influences of administration strategies, social behavior, and traditional trends in a provided perspective or state. Life expectancy could affect most of the extra communal and financial features like fertility rate, customer tendency to expend, social assets speculation, pension spending, public funding, and economic growth (Shaw et al., 2005). Certainly, health upgrading makes financial growth (Bloom & Canning, 2000; Schultz, 2002) by way of a greater life expectancy enlarges investments in a lot of arenas similar to invention and manufacture (Cervellati & Sunde, 2013; Prettnner, 2013). almost entirely research work investigating growth originated an optimistic link between inhabitants' well-being gauged by life expectancy and the economy (Bhargava et al., 2001; Sunde & Vischer, 2015).

Health is well-thought-out as "one of the essential human rights" (WHO, 2006). Life expectancy is not just the main evaluation index of people's health, it is additionally a complete index to assess economic development levels, edification, healthcare structure, and ecological superiority. As imperative health indicators of the World Health Organization, life expectancy is well thought-out as a key factor gauging that reveals human beings' livelihoods (Yu, 2017; Lu et al., 2020; Huang et al., 2020). At the globe, life expectancy has tended to increase meaningfully. Worldwide life expectancy has been observed to increase from 67.2 years in 2005 to 70.8 years in 2015 (United Nations Statistical Yearbook, 2017). Data reveals a

five-year period earlier than the reference year). Refining life expectancy along with a person's fitness and comfort has turned out to be an important objective for the United Nations and numerous nationwide management (Okamoto, 2006).

During the previous two decades, life expectancy at birth has been well-thought-out as a major pointer of economic development in rich and underdeveloped nations (National Human Development Report, 1997). This highlights how poor nations capitalize on their societal sector development like learning, atmosphere, hygiene, and additional social safety nets. The changed income per capita of advanced nations has made changes in expenditure arrangements which leads to, lessening poverty levels, higher literacy rates, better sanitation, a modest approach to drinking water, and improved nutrition. All of which has resulted in increased life expectancy. Literature relating to life expectancy has suggested factors influencing life expectancy at birth in some nations. However, we are using financial inclusion, financial development, gross domestic product, government health expenditures, urban population, and unemployment rate on life expectancy at birth by using the fixed effects technique in some selected Asian countries in this research.

Research Questions

1. How do domestic general government health expenditures influence the life expectancy of selected Asian countries?
2. What is the effect of economic growth on life expectancy in Asian countries?
3. How urban population does increase life expectancy in Asian countries?
4. What is the influence of unemployment on the life expectancy of Asian countries?

Significance of the Study

Factors such as domestic general government health expenditures, unemployment, economic growth, and urban population have been affecting life expectancy in Asian states. For this, our work emphasized how such factors determine life expectancy in these selected Asian states.

Research Hypothesis

The hypothesis of this research work has been given as:

1. H 1: The higher the spending on health expenditures, the higher the life expectancy.
2. H 2: There is a positive association between economic growth and life expectancy in Asian Economies.
3. H 3: Urban population and life expectancy are positively associated.
4. H4: Higher the unemployment rate, lower the life expectancy in Asian economies

LITERATURE REVIEW

A lot of research work has been done on factors affecting life expectancy at birth. This literature shows the link between life expectancy at birth and its major determinants. Yavari and Mehrnoosh (2006) focused on factors affecting life expectancy in African countries. Findings showed that per capita income, health expenditures, and literacy rate increased life expectancy. However, a number of people per doctor led to a decrease in life expectancy. Bayati et al. (2013) found that monthly per capita consumption expenditure, housing availability, electrification, and telephone availability affected positively life expectancy. Moreover, household, consumption expenditure, public health expenditure and control on population growth were decreasing life expectancy.

Ali and Ahmad (2014) focused on the influence of food making, enrollment, inflation, high population, and income growth on life expectancy in Oman by using data from 1970 to 2012. Findings highlighted that food production and school enrollment have increased life expectancy. Moreover, population growth decreased life expectancy. It was suggested that there should be serious control of population growth to control life expectancy. Gilligan and Skrespnik (2015) used data from 21 nations in the EMR from 1995 to 2010. The regression result found that gross domestic product, vaccination averages and urbanization affected

positively the life expectancy. Sede and Ohemeng (2015) analyzed the determinants of life expectancy in Nigeria using data from 1980 to 2011. Results showed that per capita income, education and government expenditure on health determined life expectancy. It was suggested that life expectancy must be improved in Nigeria and expenditures should be made on health and employment.

Shahbaz et al. (2016) emphasized on factors affecting the life expectancy in Pakistan 1972 to 2012. Findings showed that high expenditures on health and food availability have improved life expectancy. Increased economic misery deteriorated life expectancy. A greater urban population has enhanced life expectancy whereas illiteracy has declined it. Istaiteyeh (2017) investigated factors influencing life expectancy in Jordan from 1990 to 2014. It is found that economic growth has improved life expectancy. Life expectancy has positive relation with economic growth (Khatoun et al., 2021; Fouzia et al., 2023). According However, expenditure on health, secondary school enrolment, and urban population has increased life expectancy but at a low level. Li et al. (2018) found a smaller life expectancy of Americans than people from nations having high earnings. The study has checked the influence of life causes on early death and life expectancy in the US people by utilizing survey data from 2013 to 2014. It was suggested that following a fit lifestyle could considerably make lessen early death and extend the life expectancy of adults.

Paramita et al. (2020) focused on determining factors of life expectancy on the basis of 2015 data. The result highlighted that life expectancy was increased with mean years of schooling, spending per capita, health labor force, healthcare amenities, and atmosphere. It was suggested to improve life expectancy. Chen et al. (2021) highlighted monetary and ecological factors influencing the life expectancy of twenty nations from 2004 to 2016. The regression results indicated that per capita economic growth and the ratio of forest area to land area have increased life expectancy in but reduced life expectancy in underdeveloped nations. Entire community spending on education affected negatively life expectancy. Though, they affected positively the life expectancy in emerging nations. Roffia and Mola (2022) found the determinants of life expectancy at birth in OECD countries from 1999 to 2000. Results showed that healthcare spending and structure have improved the country's population life expectancy. Moreover, population behavior and social spending improved life expectancy. It is suggested that the focus should be made public funding. Nica et al. (2023) found causes of life expectancy in East European countries. The result showed that high health spending, renewable energy usage and IQI have improved health consequences in concerned states. Moreover, ecological degradation and fossil fuel usage have decreased life expectancy.

METHODOLOGY

Data Sources

We found a relationship of economic growth, financial inclusion, unemployment and urban population and life expectancy of Asian countries by collecting panel data from 2000 to 2018 drawn from 15 Asian nations like Bangladesh, India, Indonesia, Malaysia, Pakistan, Sri Lanka, Thailand, Philippine, Boronai Darussalam, Bahrain, Iran, Jordan, Kuwait, Mongolia, Vietnam, and China. The data were drawn from World Development Indicators. We have used a log of Life expectancy per capita at birth in total years, log of GDP per capita, domestic general government health expenditure (as % of GDP) urban population (% of total population), and unemployment rate.

Model Specification

The empirical specification of the model is taken from the General Cobb-Douglas production function. We check the impact of the financial development index. gross domestic product, urban population and unemployment rate on life expectancy at birth in Asian countries.

The econometric form of the model is as:

$$LFEXP_{it} = \beta_0 + \beta_1 DGGHE_{it} + \beta_2 LGDP_{it} + \beta_3 URBNP_{it} + \beta_4 UNEMP_{it} + \mu_{it} \quad (1)$$

where the subscript “i” shows the selected, countries (i = 1...15 for Asian economies), though, “t” shows time specification. Where $LFEXP_{it}$ is the natural logarithm of life expectancy at birth, while, whereas $LGDP_{it}$ highlights the log gross domestic product. General government health expenditures are indicated by $GGHEXP_{it}$, while $UEMP_{it}$ indicates the unemployment rate. Finally, $UPOP_{it}$ reveals the urban population.

RESULTS AND DISCUSSION

Initially we describe the stationary tests, descriptive statistics and in the next we will highlight the random effects model results. In this section, the relationship between the socio-economic determinants and life expectancy at birth are explained.

Table 1. Descriptive statistics.

Variables	Observations	Mean	Standard deviation	Minimum	Maximum
LLFEXP	285	1.853569	0.0237514	1.795915	1.886671
LGDP	285	3.642431	0.5184184	2.7201114	4.695293
GGHEX	285	1.879222	1.086132	0.4246845	6.374172
UPOP	285	56.65129	23.73971	18.196	100
UEMP	285	4.878811	3.685662	0.398	15.3

The summary statistics of important factors are given here. It is found that the mean and standard deviation of LLFEXP is 1.853569 and 0.0237514. Likewise, on average, log GDP is 3.642431. However, the unemployment rate is 4.878811 percent in these countries. Contrarily, on average, general government health expenditures are 1.879222 in the concerned nations.

Hausman specification test (FEM): As a common technique, this test compares fixed and random effects estimates of coefficients. In order to choose FEM or REM, we have used Hausman test.

Chi₂=20.37

Probability of chi₂= 0.0000

The p-value by Hausman favors fixed effects.

Depending on the Hausman test, the fixed effects model is selected and the results are shown in Table 2. The fixed effect results are shown in Table 2. Economic growth determines high living standards and improved life expectancy in selected Asian countries. The result indicates that a one-unit increase in economic growth results in increased life expectancy by 0.0065 percent. The reason may be that much production of goods and services, and high investments increase per capita income and may improve living standards. All this increases expenses on health and life expectancy improves. Our result is supported by Hassan et al. (2017).

Along with GDP, government spending on health also improves health efficiency, living standards, and life expectancy. Results showed that a one percent increase in government health expenditure results in increased growth of 0.1415 percent in selected Asian countries. Health expenditures are important for high efficiency and growth. The study result is consistent with Bayati et al. (2013) and Hassan et al. (2017).

Table 2. Determinants of life expectancy by fixed effects methods.

Variables	Coefficients	Std. Error	t--statistics
GGHEXP	0.1415*	0.0277	5.11
LGDPPC	0.0065*	0.0028	2.32
UPOP	0.0083*	0.0019	4.29
UEMP	0.0019*	0.0005	3.60
C	0.4427*	0.0449	9.86
R-Square within	0.78		
R-Square between	0.71		
R-Square overall	0.73		

Note: *indicates 1 percent level of significance.

The urban population has also a positive influence on the life expectancy of selected Asian countries. The result reveals that a one percent increased urban population will lead to an increase in economic growth by 0.0083 percent in these economies. A high urban population may consist of highly skilled and educated individuals with high earnings. The financially sound segment of the population increases spending on education and health. So, this will improve the life expectancy in Asian economies.

The unemployment rate has affected life expectancy negatively. The result indicates that one percent increased unemployment will tend to reduce life expectancy at birth by 0.0019 %. The reason may be that unemployment reduces job chances and leads to low living standards and life expectancy.

CONCLUSION AND RECOMMENDATIONS

Health-related issues are significant nowadays. Our research work focuses on major factors affecting life expectancy at birth. Considering this, we have used data from 2000 to 2018 and found that general government health expenditures have decreased life expectancy at birth as it increases the living standard and life expectancy at birth in some selected Asian economies. It is concluded that GDP and general government health expenditures are contributing to improving life expectancy at birth in Asian countries. Along with these factors, the urban population also enhances life expectancy at birth. However, the unemployment rate seems to be influencing life expectancy at birth. Unemployment decreases purchasing power and economic efficiency. Urban population increases the workforce, economic growth, and development. All this will improve life expectancy at birth.

On the basis of the findings, it is suggested that governments of these economies should increase spending on health facilities. More employment chances should be given to the general public on an equal basis. Finally, free of cost higher educational facilities should be given or provided on a priority basis. For this, industry should be boosted to improve economic growth and development.

REFERENCES

Ali, A., & Ahmad, K. (2014). *The Impact of Socio-Economic Factors on Life Expectancy for Sultanate of Oman: An Empirical Analysis*. University Library of Munich, Germany.

- Bayati, M., Akbarian, R., & Kavosi, Z. (2013). Determinants of life expectancy in eastern mediterranean region: A health production function. *International journal of Health Policy and Management*, 1(1), 57.
- Bhargava, A., Jamison, D. T., Lau, L. J., & Murray, C. J. (2001). Modelling the effects of health on economic growth. *Journal of Health Economics*, 20(3), 423–440.
- Bloom, D. E., & Canning, D. (2000). The health and wealth of nations. *Science*, 287(5456), 1207–1209.
- Cervellati, M., & Sunde, U. (2013). Life expectancy, schooling, and lifetime labour supply: Theory and evidence revisited. *Econometrica*, 81(5), 2055–2086.
- Chen, Z., Ma, Y., Hua, J., Wang, Y., & Guo, H. (2021). Impacts from economic development and environmental factors on life expectancy: A comparative study based on data from both developed and developing countries from 2004 to 2016. *International Journal of Environmental Research and Public Health*, 18(16), 8559.
- Fouzia, M., Javed, I., Nawaz, S., Javaid, H., Yasin, M., & Mumtaz, H. (2023). Role of education and financial development in economic growth of selected Asian countries. *Journal of Education and Social Studies*, 4(1), 119-126.
- Gilligan, A. M., & Skrepnek, G. H. (2015). Determinants of life expectancy in the Eastern Mediterranean Region. *Health Policy and Planning*, 30(5): 624-637.
- Hassan, F. A., Minato, N., Ishida, S., & Nor, N. M. (2017). Social environment determinants of life expectancy in developing countries: a panel data analysis. *Global Journal of Health Science*, 9(5), 105-117.
- Ho, J., & Hendi, A. (2018). Recent trends in life expectancy across high income countries. *British Medical Journal*, 362, k2562.
https://www.who.int/governance/eb/who_constitution_en.pdf.
- Huang, D., Yang, S., & Liu, T. (2020). Life expectancy in Chinese cities: spatially varied role of socioeconomic development, population structure, and natural conditions. *International Journal of Environmental Research and Public Health*, 17(18), 6597.
- Istaiteyeh, R. M. (2017). Economic and social factors in shaping Jordan's life expectancy: Empirical Analysis (1990-2014). *Advances in Management and Applied Economics*, 7(5), 45.
- Khattoon, R., Javed, I., & Hayat, M. M. (2021). Impact of human capital on economic growth: A case study of Pakistan. *Journal of Social Sciences Advancement*, 2(2), 64-69.
- Li, Y., Pan, A., Wang, D. D., Liu, X., Dhana, K., Franco, O. H., ... & Hu, F. B. (2018). Impact of healthy lifestyle factors on life expectancies in the US population. *Circulation*, 138(4), 345-355.
- Lu, P.; Wang, S.; Liu, H. (2020). Quantitative analysis of the weights of the main factors affecting life expectancy in China. *Gansu Med*, 39, 836–840.
- National Human Development Report. (1997). United nations development program. New York: Oxford University Press.
- Nica, E., Poliakova, A., Popescu, G. H., Valaskova, K., Burcea, S. G., & Constantin, A. L. D. (2023). The impact of financial development, health expenditure, CO2 emissions, institutional quality, and energy Mix on life expectancy in Eastern Europe: CS-ARDL and quantile regression Approaches. *Heliyon*, 9, 11.
- Okamoto, K. (2006). Life expectancy at the age of 65 years and environmental factors: an ecological study in Japan. *Archives of Gerontology and Geriatrics*, 43(1), 85-91.
- Paramita, S.A., Yamazaki, C. & Koyama, H. (2020). Determinants of life expectancy and clustering of provinces to improve life expectancy: an ecological study in Indonesia. *BMC Public Health* 20, 351.
<https://doi.org/10.1186/s12889-020-8408-3>.
- Prettner, K. (2013). Population aging and endogenous economic growth. *Journal of Population Economics*, 26(2), 811–834.

- Roffia, P., & Mola, L. (2022). Is COVID-19 enough? Which underestimated conditions characterise the adoption of complex information infrastructures in small and medium-sized enterprises. *Journal of Business Research*, 144, 1249-1255.
- Schultz, T. P. (2002). Why governments should invest more to educate girls. *World development*, 30(2), 207-225.
- Sede, P. I., & Ohemeng, W. (2015). Socio-economic determinants of life expectancy in Nigeria (1980–2011). *Health Economics Review*, 5(1), 1-11.
- Shahbaz, M., Loganathan, N., Mujahid, N., Ali, A., & Nawaz, A. (2016). Determinants of life expectancy and its prospects under the role of economic misery: A case of Pakistan. *Social Indicators Research*, 126, 1299-1316.
- Shaw, J., Horrace, W., & Vogel, R. (2005). The determinants of life expectancy: An analysis of the OECD health data. *Southern Economic Journal*, 71(4), 768–783.
- Sunde, U., & Vischer, T. (2015). Human capital and growth: Specification matters. *Economica*, 82(326), 368–390.
- United Nations Statistical Yearbook. (2017). edition—United Nations Statistics. Retrieved online from: <https://unstats.un.org>.
- WHO. (2006). Constitution of the World Health Organization. Retrieved online from:
- Yavari, K., & Mehrnoosh, M. (2006). Determinants of life expectancy: A cross-country analysis. *Iranian Economic Review*, 11(15): 131-142.
- Yu, T. (2017). *Analysis and Prediction of Factors Influencing Population Life Expectancy*; Capital University of Economics and Business: Beijing, China.