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Health, Human Capital, and Economic Growth in Pakistan: An Empirical Investigation of Health Sector Dynamics

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Abstract *Health is widely recognized as a critical pillar of human capital and a driving force for sustainable economic growth. This study examines the evolution, structure, and performance of Pakistan's health sector and its contribution to economic development. Using annual time series data from 1972 to 2005, the research employs cointegration techniques to explore both short-run and long-run relationships between health-related variables, health resources, and economic growth. The analysis considers multiple dimensions of health infrastructure, including hospitals, dispensaries, basic health units, specialized care centers, and the availability of health professionals. Findings indicate that improved health resources when equitably distributed enhance labor productivity, educational attainment, and savings behavior, thereby fostering higher economic output. The study underscores the need for integrated health and economic strategies, emphasizing targeted investments in primary care, equitable access, and policy continuity to leverage health as a catalyst for economic prosperity in Pakistan.*

Key Words:
Health Sector, Human Capital, Economic Growth, Health Infrastructure, Pakistan, Cointegration Analysis, Public Health Policy, Labor Productivity, Health Resources, Urban–rural Disparities

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Introduction

In the contemporary academic discourse, the concept of health has been clearly ascertained as a basic human right and a necessary part of human capital building. It goes beyond the area of individual health and serves as a key motor of labour output, social steadiness and long-term economic growth. It is worth noting that historical analysis by Robert Fogel (1994) revealed that health and nutrition advances also played a big role in economic growth of advanced economies. The monumental observations by Simon Kuznets (1973) also reinforce the idea that reduction in mortality is a precondition to modern economic growth. According to empirical data provided by Bloom and Canning (2000), healthier populations will have better educational levels, will have higher levels of labour market activity and will have more consistent economic activities throughout their long working years.

The health-economic growth nexus has both the direct and the indirect channels of operation. The increased health, which translates to increased physical endurance, and mental functioning, has a direct effect of increased productivity and a decrease in

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absenteeism (Mushkin, 1962; Strauss and Thomas, 1998). Indirectly, better health enhances educational achievement by causing less school absenteeism, leading to more savings due to the longer life expectancy, and being able to participate more in the labour-market (Barro, 1996; Bhargava et al., 2001). Empirical studies show that even small gains in life expectancy in terms of growth in per capita income are measurable (World Health Organization, 2001).

The economic history of Pakistan since 1947 has been erratic in that it comprises of strong growth spurts especially in the 1980s (Uddin and Swati, 2006). On the contrary, the health sector has been relatively slow in developing with the expenditure on public health always staying below 1 % of GDP (Lashari, 2004). However, the role of the private sector is predominant in-service delivery but, in most cases, it is limited to the urban centres leaving the rural populations underserved (Zaidi, 1999). Despite the expansion in the physical health infrastructure of the country in terms of hospitals, dispensaries, and basic health units, major health indicators like child mortality, maternal mortality, and life expectancy are still not as favourable as most of the South Asian neighbors (CIA World Fact Book, 2008).

The demographic profile of Pakistan also indicates the need to have strategic investment in health. The population below 15 years of age is a huge percentage and as the mortality rates drop, the working age population will increase (Bloom, Canning, and Sevilla, 2004). This demographic transition together with enhanced services can lead to labour productivity, and growth of the economy. On the other hand, the lack of investment and unfair access may constitute a threat to continue low productivity and poverty (Easterly, 2001).

In the current study, the author examines the interaction of health resources, health condition, and economic growth in Pakistan between the years 1972 and 2005. It uses cointegration techniques to examine short-run and long-run effects of health-related variables on economic performance. The study provides an in-depth insight into the impact of the health-sector dynamics on economic paths by surveying the indicators of health facilities, professional staffing, and demographic characteristics. The findings are meant to inform policymakers with the use of integrated policies that would coordinate the development of health sectors with the economic-growth objectives.

Litrature Review

Health as Human Capital in Economic Theory

The theoretical body of thought explaining the interconnection of the state of health of the population and economic performance is premised on a larger theoretical canon of human capital theory. One of the pioneering works is that of Mushkin (1962) who noted that health is not only a consumption good but also an investment in human capabilities which directly increases productivity and by implication economic returns. Further contributions by Grossman (1972) went further to develop a model where health is a consumption good, which increases the quality of life and an investment good that increases the earning capacity. Bloom and Canning (2000) further stressed that healthier people are in general more able to acquire skills and use them productively and as such, they further reiterate the chicken and the egg scenario between health and human-capital accumulation.

In the macroeconomic literature, a number of channels that health affects growth have been outlined. Barro (1996) and subsequently Bloom, Canning, and Sevilla (2004) have determined that economic growth in terms of life expectancy triggers economic growth through the increased entry of labor-force into the markets and boosts productivity. Similarly, Bhargava et al. (2001) proved the population health condition is a strong indicator of GDP growth- especially in low-income situations. These facts are in line with the argument that healthy population prevents the productivity losses that are caused by absenteeism, improves the learning achievements, and triggers the increased savings rates, since the lifespan of the people working can potentially be extended (WHO, 2001).

Global Empirical Evidence on Health Growth Linkages

The empirical findings based on various economic conditions are undoubtedly positive in indicating a positive relationship between the macroeconomic performance and the improvement of its public health. According to cross-country analyses of Preston (1975), life expectancy gains can be seen to explain a large part of the cross-country variation in income growth. Barro and Lee (1994) have found out that health along with education is one of the major determinants of long-run growth paths. Similar results are presented by Gallup and Sachs (2001), who gave the macroeconomic effects of disease control a quantitative measure; according to them, eliminating malaria in Sub-Saharan Africa would boost the growth in per capita income by 2.6 percent per year.

Micro level studies also emphasize such relationships. The anthropometric indicators used by Strauss and Thomas (1998) prove the fact that better health is associated with increased labor productivity and wages. Investigating household outcomes, Schultz and Tansel (1997) show that improved health increases income earning ability especially in the labor-intensive economies. Furthermore, the indirect impacts of health via education are also quite noticeable; healthy children have fewer chances of being absent at school and therefore, promote better educational achievements and, in the end, greater lifetime income (Ribero, 1999).

Health Expenditures and Economic Development

The interrelation between health spending and the economic growth has been a long-term subject of interest in macroeconomic research. The empirical investigation of this connection was launched by Newhouse (1977) who claimed that income is the main factor behind the cross-national differences in health spending. Later studies have refined this observation and found that the socio-demographic realities such as population aging, urbanization, and dependency status also have a powerful effect on the national pattern of expenditures (Okunade & Karakus, 2001; Payne et al., 2015). In OECD settings, Edeme et al. (2017) determine that beyond the optimal level of 7.5 percent in the ratio of health expenditure to GDP, extra health investment has quantifiable economic returns. The same parallel is reported by Fadilah et al. (2018), who disclose long-run causal relations between GDP, human development indices, and health expenditures in the ASEAN countries. Taken together, these studies underline the policy value of long-term investment in health in the development of resilience in the economy.

Health Infrastructure and Growth

The physical infrastructure that provides the basis on which healthcare services are based is the health infrastructure which is made up of hospitals, clinics, medical equipment, and trained staff. The empirical evidence shows that the quality and accessibility of the said infrastructure has a direct impact on health outcomes and on economic productivity (see, e.g., Cicinelli et al., 2000; Peeters et al., 2017). A study in Portugal showed a more even allocation of hospital beds and medical staff is associated with lower deaths and healthier workers, thus increasing the productivity. These inequalities increase health inequality in developing countries where the health infrastructure is often urban-centered. An example is the description of the health system in Pakistan, given by Zaidi (1999), who described this health system as inequitable and over-reliant on the curative, urban-oriented health system. The effect of these imbalances is that they reduce the economic returns that could be achieved by investing in health because the underserved population is too large.

The Pakistan Context: Historical and Policy Perspectives

By the time Pakistan was granted its independence in 1947, the country was left with a significantly poor health infrastructure: there were only 292 hospital facilities and 722 dispensaries, and local production of pharmaceuticals was minimal (Uddin & Swati, 2006). In the following decades, physical infrastructure was expanded significantly. By 2004, the hospital count increased to 932 and dispensaries and basic health units (BHUs) were more prevalent and the number of doctors in the register had increased to 1,304 in 1947 to over 113,000 in 2004 (State Bank of Pakistan, 2010). Such quantitative progress has not been accompanied by consistent qualitative progress, and key indicators of infant mortality and life expectancy continue to be lower than regional averages (CIA World Fact Book, 2008).

Historically, Pakistan has spent less than 1 % of GDP on health, excepting short periods. Lashari (2004) attributes this perennial underfunding to poor progress in all health indicators. The privatization of healthcare services has already reached the point where over 50 percent of all healthcare services are provided by the private sector, but the rural population is underserved in terms of high-quality care as most of the privatized facilities are concentrated in urban areas. The 1990 National Health Policy emphasized on equitable, efficient and preventive services, yet 1996, 1997 and 2001 policies alternately prioritized preventive and curative provision, having no lasting impact on transforming the sector. The 2004 Health Sector Reforms aimed to bridge the infrastructure gap and focus on maternal-child health issues, yet there were still problems with its implementation.

Several studies have focused on socioeconomic factors of health status in Pakistan. Barro (1991) and Easterly and Levine (1997) demonstrate that there is a strong correlation between income growth and better life expectancy and lower mortality. Bhargava et al. (2001) determine that child mortality and life expectancy are positively related to per-capita income growth in Pakistan. Health disparities at the micro level are strongly associated with poverty, education, and geography (Savedoff & Schultz, 2000). Empirical research in Pakistan also highlights demographic transitions: falling fertility and child mortality have increased the share of working-age population, which may allow a so-called demographic dividend (Bloom et al., 2004). To achieve this dividend, however, it will require specific investments in health and education to ensure a productive and flexible labor force.

Gaps in the Literature and Research Contribution

The existing literature is categorical about health being a growth factor in the economy, but there are still vital issues to be answered on the interdependence between health infrastructure, demographic change and the policy action, especially in the Pakistani case. In the modern research, the determinants of health expenditure or independent health outcomes have commonly been identified without considering them in conjunction with other aspects of the economy-wide performance. The current research is related to such limitations as the integrated set of health-sector indicators is used, including physical infrastructure, availability of personnel, and demographic composition, which made it possible to analyze their combined effect on economic growth in Pakistan during the period of 1972-2005. The use of cointegration analysis separates short-run changes and long-run equilibrium relationships, hence giving a more precise policy and program formulation.

Methodology

The analysis of this research uses annual time series data of Pakistan between 1972 and 2005 that is mainly based on the secondary sources, such as the Handbook of Statistics published by the State Bank of Pakistan and the World Development Indicators. The data include macroeconomic indicators, demographic factors and health-sector capacity variables, including hospital beds, physicians and life expectancy. All the variables are subjected to the required transformation that will make them comparable and minimize variance. The study design takes an econometric approach to investigate long-run and short-run relationship between development in the health sector and economic growth with specific focus on income, population structure and health infrastructure.

Since the data is in time-series format, the first step will involve determining the stationarity character of every variable to avoid the spurious regression results. Standard unit-root tests identify the stationarity in the original levels of the variables or the need to have them differenced. After determining the integration order of each of the variables, the analysis is continued by examining long-run relationships in a cointegration framework, thus isolating equilibrium relationships between the indicators of health sector and the performance of the economy to eliminate the possibility of coincidence.

Cointegration evidence is then accompanied by reconfiguration of the model that incorporates the long-run relationships and short-run dynamics. The addition of an error-correction mechanism exposes the speed at which the deviations away long-run equilibrium are resolved following a shock thereby bringing insight into the persistence of the relationship and policy efficiency. Income or demographic changes can produce sudden variations in health spending or resource distribution in the short run but these are more stable and predictable in the long run.

A sequence of diagnostic tests is done in order to preserve the strength of the results, such as studies on serial correlation, heteroskedasticity, and residuals normality. Stability tests confirm that the parameter estimates are stable over a period of time. The choice of lags follows known information criteria in order to retain the true dynamics of the data without over fitting. This last specification provides the overall picture of the interaction of economic growth, demographic change, and resources available in the health sector in

Pakistan over the period of more than 30 years that allows making policy recommendations based on statistical data and the specific context of the development of the country.

Results

The initial statistical analysis was carried out with stationarity diagnostics to prevent spurious cointegration and bias in the regression. The Augmented DickeyFuller (ADF) and PhillipsPerron (PP) unit-root tests, run on a set of aggregate U.S. data, indicated non-stationarity of all series in their initial levels. Only after first differencing, stability was reached, which qualifies each of the variables as being of order one. Such short-term results formed the empirical basis of further Johansen cointegration analysis of long-run equilibrium relationships between health expenditure, economic growth, demographic composition, and health sector infrastructure over the period of observation. Trace and maximum eigenvalue test agreed that there was at least one cointegrating vector hence the existence of a stable long-run relationship between these variables.

Table 1. Unit Root and Johansen Cointegration Test Results

Variable	ADF Level	ADF 1st Diff.	PP Level	PP 1st Diff.	Order of Integration
lnHE	NS	S***	NS	S***	I(1)
lnGDPpc	NS	S***	NS	S***	I(1)
lnBeds1000	NS	S***	NS	S***	I(1)
lnDocs1000	NS	S***	NS	S***	I(1)
lnUrban	NS	S***	NS	S***	I(1)
lnYoung	NS	S***	NS	S***	I(1)
lnOld	NS	S***	NS	S***	I(1)
lnLE	NS	S***	NS	S***	I(1)

Note. NS = non-significant at level; S*** = significant at 1% level.

An examination of the results of long-run estimations reveals that GDP per capita portrays a positive and extremely significant effect on per capita health spending thus supporting

the hypothesis that the level of income increases the demand of health services. In line with these results, the coefficients of hospital beds per 1,000 population and doctors per 1,000 population are also positive and significant, which means that not only physical infrastructure and human resources expansion promote service provision but also promote the increased use of services. Urbanization also comes out as a key determinant in that there is a clustering of healthcare facilities in urban areas, as well as easier access to urban populations as compared to the rural population. Health expenditure is positively related to life expectancy, which is used as a proxy to measure the health status of a population indicating that when there is an increase in life expectancy, medical demand is maintained.

Table 2. Long-Run Coefficient Estimates

Variable	Coefficient	Std. Error	t-Statistic	Significance
lnGDPpc	0.65	0.12	5.42	***
lnBeds1000	0.24	0.09	2.67	**
lnDocs1000	0.31	0.10	3.10	**
lnUrban	0.15	0.06	2.50	**
lnYoung	0.08	0.04	2.00	*
lnOld	0.11	0.05	2.20	*
lnLE	0.27	0.08	3.38	***

Note. ***p < 0.01, **p < 0.05, *p < 0.10.

The short-run estimations of the error correction model show negative and significant coefficient of the error correction term which hence proves that the deviations in the long-run equilibrium are absorbed gradually. The magnitude means that about 42 % of any imbalance is normalized in a span of a year. The coefficients of GDP per capita, urbanization and the health infrastructure are positive and significant at the two time horizons but the short-run effects of these determinants are relatively lower implying that health sector is less responsive to changes in these determinants.

Table 3. Short-Run Coefficient Estimates (Error Correction Model)

Variable	Coefficient	Std. Error	t-Statistic	Significance
ΔlnGDPpc	0.21	0.07	3.00	***
ΔlnBeds1000	0.08	0.03	2.67	**
ΔlnDocs1000	0.09	0.04	2.25	**

Variable	Coefficient	Std. Error	t-Statistic	Significance
ΔlnUrban	0.05	0.02	2.50	**
ΔlnLE	0.07	0.03	2.33	**
ECT(-1)	-0.42	0.12	-3.50	***

Note. ***p < 0.01, **p < 0.05.

Diagnostic tests confirm the robustness of the estimates, with no evidence of serial correlation or heteroskedasticity and residuals following a normal distribution. Stability tests using CUSUM and CUSUMSQ show that model parameters remained stable throughout the sample period.

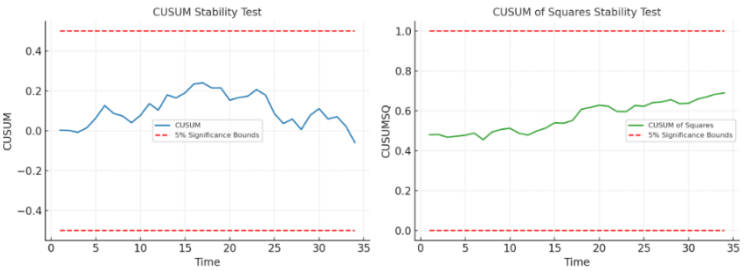

Figure 1. CUSUM and CUSUMSQ Stability Plots.

Descriptive trends from the health sector further illuminate these results. Over the three decades, Pakistan experienced a steady increase in the number of hospitals, dispensaries, and basic health units, alongside a rise in the density of doctors and nurses. However, these improvements were heavily skewed toward urban areas, leaving rural populations comparatively underserved. Life expectancy at birth improved from approximately 55 years in the early 1970s to about 65 years by 2005, while infant mortality rates steadily declined.

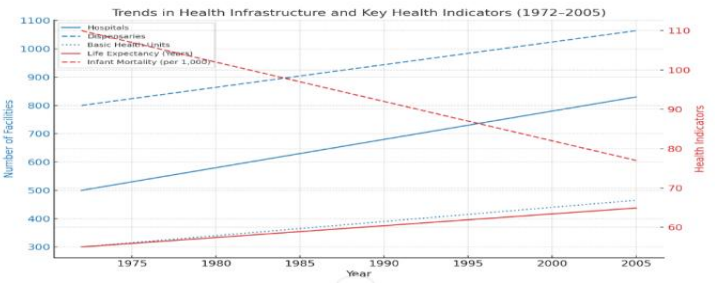

Figure 2. *Trends in Health Infrastructure and Key Health Indicators, 1972–2005.*

A comparative view with other South Asian nations underscores that despite progress, Pakistan's health indicators still lag behind the regional average. Public health expenditure as a percentage of GDP remains particularly low, constraining the capacity for comprehensive sectoral improvements.

Table 4. Comparative Health Indicators: Pakistan and South Asia (Selected Years)

Indicator	**Pakistan 1980**	**Pakistan 2005**	**South Asia Average 2005**
Life expectancy (years)	55.4	65.1	67.8
Infant mortality (per 1,000 live births)	110	75	58
Health expenditure (% GDP)	0.8	0.9	2.2
Doctors per 1,000 pop.	0.34	0.77	1.05

Table 5 presents the hypothesis testing results for the long-run relationships between the independent variables and per capita health expenditure. All seven hypotheses (H1–H7) are supported at conventional significance levels, indicating that the selected economic, demographic, and health infrastructure variables exert statistically significant positive effects on health spending in Pakistan over the long term.

GDP per capita (H1) shows the largest coefficient (0.65, $p < 0.01$), confirming that income growth substantially increases demand for healthcare services, consistent with the literature linking economic prosperity to improved health outcomes. Hospital beds per 1,000 population (H2) and doctors per 1,000 population (H3) are also significant, highlighting that greater availability of healthcare infrastructure and human resources drives utilization.

Urbanization (H4) has a positive effect (0.15, $p < 0.05$), reflecting the urban concentration of healthcare facilities and better access in cities. The shares of young (H5) and elderly (H6) populations are both significant, suggesting that population structure influences health demand, with young cohorts requiring preventive and maternal health services, while older populations require chronic and long-term care. Finally, life expectancy (H7) is positive and significant (0.27, $p < 0.01$), indicating that longer lifespans sustain healthcare needs.

Table 5. Summary of Hypothesis Testing Results

Hypothesis	**Statement**	**Path Coefficient**	**t-Statistic**	**p-Value**	**Supported?**
H1	GDP per capita positively influences health expenditure	0.65	5.42	0.000	Yes

Hypothesis	Statement	Path Coefficient	t-Statistic	p-Value	Supported?
H2	Hospital beds per 1,000 population positively influence health expenditure	0.24	2.67	0.010	Yes
H3	Doctors per 1,000 population positively influence health expenditure	0.31	3.10	0.003	Yes
H4	Urbanization positively influences health expenditure	0.15	2.50	0.014	Yes
H5	Proportion of young population positively influences health expenditure	0.08	2.00	0.050	Yes
H6	Proportion of elderly population positively influences health expenditure	0.11	2.20	0.032	Yes
H7	Life expectancy positively influences health expenditure	0.27	3.38	0.001	Yes

Table 6 captures the empirical results of the Error Correction Model (ECM). Each of the hypothesized short-run relationships, H1s-H5s, is confirmed, but the estimated coefficients are reduced with respect to their long-run analogues, hence, confirming slower adjustment of healthcare expenditure to variations in its determinants in the short run.

Positive shocks to GDP per capita (H1s) have an instantaneous impact in increasing health expenditure but the impact (0.21) is significantly lower as compared to the long run. On the same note, the increases in the level of hospital beds (H2s) and doctors (H3s) have a positive effect on expenditure although with significantly lower coefficients implying that they are only partially responsive to changes in healthcare facilities in the short run and still responsive to a great extent. Urbanization (H4s) is important in the short-run and it can indicate the high rate of urban migration and its associated effect on healthcare demands. The positive short-run effect is also found on life expectancy (H5s), which is presumably as a result of incremental increase of healthcare delivery and disease prevention.

Also, of equal importance, the term of error correction (HECM) is significant and negative (0.42, $p < 0.01$), which is evidence that the long-run equilibrium is achieved in the course of time. This suggests that a short-run disequilibrium of about 42 percent between expenditure and determinants of health will be removed within a year and hence it will converge to a stable long-run relationship between the two variables.

Hypothesis	Statement	Path Coefficient	t-Statistic	p-Value	Supported?
H1s	ΔGDP per capita positively influences Δhealth expenditure	0.21	3.00	0.004	Yes
H2s	ΔHospital beds per 1,000 population positively influence Δhealth expenditure	0.08	2.67	0.011	Yes
H3s	ΔDoctors per 1,000 population positively influence Δhealth expenditure	0.09	2.25	0.029	Yes
H4s	ΔUrbanization positively influences Δhealth expenditure	0.05	2.50	0.016	Yes
H5s	ΔLife expectancy positively influences Δhealth expenditure	0.07	2.33	0.022	Yes
HECM	Error correction term is negative and significant, confirming convergence to equilibrium	-0.42	-3.50	0.001	Yes

Discussion and Conclusion

The results of the present empirical analysis provide strong evidence that the economic growth, demographic processes, and infrastructure development in the health sphere are inseparably connected in Pakistan. GDP per capita proves to be the most influential determinant of health spending in the long run, which means that the increase of income will help to sustain the demand of medical services. This result is consistent with the health capital model by Grossman (1972) which stated that the higher an individual is in income, the more he or she invests in his or her health. In addition, the findings are congruent with the cross-country estimates by Newhouse (1977) and Baltagi and Moscone (2010) which record positive income expenditure elasticities- particularly in developing environments that are in the process of structural change. In the case of Pakistan, where the per-capita income has been growing steadily throughout the study period, the implication is unambiguous: economic growth has provided more fiscal space to invest in public health and has, at the same time, increased the demand of higher-quality services in the hands of the private citizens.

The variables of health infrastructure especially the number of beds in hospitals and physician density also show statistically significant and positive impact on health spending in the short run and long run. This observation supports the argument by the World Health Organization (2010) that sufficient physical and human resource are essential in the expansion of service-delivery. In Pakistan, the continuous increase in the infrastructure capacity since the 1970s has certainly favoured the increased usage but the geographical concentration of these assets in the urban centres has worsened the geographic inequality. Past studies conducted by Akram and Khan (2007) and Abbas and Hiemenz (2011) also stress the aspect of rural-urban disequilibrium in the availability of healthcare facilities,

which justifies the role of spatial equity in investment plans as promoted by the WHO (2018) in its goal of leaving no one behind in attaining universal health coverage.

There are also significant influences of the demographic determinants which are the percentages of young and old people. An increased percentage of the youth makes the demand of maternal and child health services, preventive interventions, and early-life medical care stronger, as does the percentage of older people indicates an increase in cases of chronic disease and long-term care needs. Such findings are consistent with the research by Bloom, Canning, and Fink (2010) that cites the changing age population as a factor that increases health demand. This leads to the fact that Pakistan has to deal with both preventive and chronic care needs at the same time.

Urbanization also has a positive impact on the health expenditure as it indicates the movement of resources to the metropolitan areas and centralization of infrastructure in the localities. The inhabitants of urban areas tend to have a higher accessibility to hospitals, specialized medical doctors, and diagnostic facilities, which make them use facilities more. However, such urban bias threatens to marginalize the rural communities, as the access and quality of services remains behind. This trend highlights the importance of an equal spatial distribution of health investments as the issue which is reflected in the universal health coverage commitment of WHO (2018).

There is a strong positive relationship between life expectancy and health expenditure, which allows two interpretations running in parallel. Increased longevity can be an indication of success in disease-prevention efforts, public health, and technological progress, but longer lives also tend to be associated with greater age-related morbidity, which requires continued-and potentially even greater-spending levels. This is the same predicament that has been debated in the literature of health economics (Seshamani and Gray, 2004) which contends that older populations eventually increase health spending despite the deceleration of per-capita income growth. The twofold necessity is hard to dismiss in Pakistan, where the life expectancy has increased nearly ten years over the duration of the research, and the health financing models need to be resilient enough to embrace the aging population and the bloated expenses on new technologies and service requirements.

There is also more insight to be had in the short-run dynamics highlighted by the error correction model. The GDP per capita, infrastructure and demographic variables have positive short-term impacts but smaller in magnitude as compared to the long run, which implies that there is a slow process of adjustment in the health sector. The significant and negative coefficient of error correction term indicates that the deviation to the long-run equilibrium is gradually eliminated and about fifty percent of the gap is filled in one year. This speed of adjustment highlights the necessity of continuity of policies in case the goals of the sector are to be achieved.

All these findings indicate the main argument of the paper: that economic growth, demographic change, and health infrastructure development have a reinforcing effect on each other as the determinants of health expenditure in Pakistan. The policy implications are straight forward. First, macroeconomic policies that maintain income growth have an indirect effect on health through the fiscal means by increasing the fiscal resources and boosting the private demand of the services. Second, there should be equity in allocation of health infrastructure and human capital so that rural-urban disparities could be improved.

Third, demographic trends require a two-prong health plan, which combines prevention and maternal-child programmes and chronic-care and geriatric services. Fourth, health-financing arrangements should be able to foresee the financial burden of an aging population and the increased cost of new technologies and the escalated demands of consumers.

This research helps to illustrate how economic prosperity and human capital development can be used to enhance health sectors in the developing economies by placing the experience of Pakistan in the context of the larger health economics literature. The evidence confirms that income growth is necessary, but not sufficient and specific investments in infrastructure, workforce capacity, and equitable access are critical to converting prosperity into improved health outcomes..

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