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Positive developments of Saudi Arabia in healthcare spending and economic growth: An academic report

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Abstract

This study examines the impact of medical tourism on economic development in Saudi Arabia, with health expenditure as a mediating variable and governance as a moderating factor. Using annual data from 2000 to 2024 and applying mediation and moderation models, the analysis shows that medical tourism exerts a significant positive effect on economic development. Health expenditure is found to partially mediate this relationship, suggesting that greater healthcare investment enhances the growth benefits of tourism revenues. Governance further strengthens the positive association, indicating that effective institutions and regulatory quality amplify sectoral contributions to the economy. The findings highlight the importance of integrating medical tourism strategies with healthcare financing and institutional reforms to achieve sustainable economic development.

Keywords: Medical tourism, Economic development, Health expenditure, Governance

Introduction

Globally, growth will continue to stagnate at around 3.0 percent in 2025, which is a long way below the 2000 to 2019 average of 3.7 percent with tighter financial conditions, tariff uncertainty and declining post-pandemic recoveries dragging on activity (IMF, 2025). The obstacle to trade is evident drag: the World Bank, June 2025 forecasts cite the decline in speed on the rise of trade barriers and policy uncertainty as well as high investment, especially in most EMDEs (Akyüz, 2017). The inflationary strains have been relieved, but with uneven distribution; OECD estimates show inflation throughout the area of approximately 4.2 percent by the year 2025, meaning underlying strains in real-income will not vanish; and neither can policy rates be normalized in the near term (Goldstein, 1977). Large and growing public debt further limits growth: the world now has approximately $102 trillion in public debt, developed countries burden itself with less than one-third; external service of public debt paid up to 487 billion in 2023, consuming every fiscal space of investment and social expenditure (UNCTAD, 2025). The emerging and developing economies are projected to expand at 4.1 percent in 2025, although the momentum is uneconomic amid the structural deceleration of China and the inferior world business (Shalal, 2025). In developed economies, labor-market cooling and elsewhere in Europe and Asia, the aging population will constrain the potential output growth by 2026 (McKinsey, 2024). Climate transition requires increased financing requirements despite the multilateral development banks having upsized climate flows to an all-time high of $137 billion in 2024, still short of estimated requirements (Bitsadze, 2025). In general, the short-term growth outlook is that of slowing growth, high levels of policy and commercial uncertainty, inertial inflation in spots, and constrained financial limitations.

Saudi Arabia has undergone a vast and far-reaching transformation within the last decade, with the vision of 2030 agenda. People often talk about oil dependence and framework limitations, but it is also important to discuss the achievements in major sectors such as healthcare and economic diversification. This report highlights the achievement in Saudi Arabia in healthcare sector and its economic growth. The aim is to provide an even-handed and fact-based understanding of country's development. Saudi Arabia has undergone a significant progress in healthcare and investment in medical services. National studies show that "Entire Saudi population have basic healthcare facilities and exile residents have reached up to 96 percentage". This act puts the Saudi kingdom among the top countries in universal health care access. Healthcare

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expenditure has grown increasingly alongside the improvements. According to study in 2021, national healthcare spending reached up to SAR 196 billion (equivalent to USD 52 billion), which is around 6 percent of the total GPD. This investment shows the government' continuous interest in public health. In the 2022, the government allocated 14.4 percent of total GPD in healthcare and social development, which is the largest allocation with respect to other sectors.

These financial commitments have led the country to the major improvements in healthcare infrastructure. The Saudi Kingdom has expanded its hospital infrastructure, strengthened the healthcare network and implemented the latest innovation such as Ai-supported diagnostics, nationwide Electric Health Record (EHR) systems and modern telemedicine services. Together with these investments, the kingdom moves toward its goal of becoming the reginal leader in the field of medical innovation and healthcare. Along with these improvements in the healthcare sector, the Kingdom 'economy has shown strong and positive growth. In the first quarter of 2025, the Kingdom recorded 3.4 percent real GDP growth with non-oil sector growth up to 3.6 percent. These figures show the growing attitude and resilience of non-hydrocarbon industries to support the national economic performance. For the first quarter of 2025, real GDP growth increased by an average of 3.6 percent. Forecasting institutions as the Ministry of Finance, KPMF, and Jadwa investment predict annual growth of 3.7 to 4.6 percent for 2025. This positive trend is largely fueled by different sectors such as tourism, information technology, logistics, manufacturing, financial services and renewable energy. This investment trajectory further reinforcing the economic growth. Giga-projects such as NEOM, Red Sea Global, Qiddiya, and Diriyah Gate have played a significant role in employment, construction and foreign direct investment (FDI). Additional, regulatory reforms—such as digital government platforms, simplified business licensing, and strengthened protections for foreign-investors—have strong kingdom' competitiveness. Collectively, these developments show that the country is successfully undergoes a steady transition towards a diversified and future-ready economy.

Recent achievements of Saudi Arabia in healthcare and economic growth demonstrates a clear and significant shift in its development model. The country has achieved the major gains in social infrastructure, reflected by Universal health coverage, growing medical expenditure, and the adoption of modern health technologies. On economic side, strong growth in non-oil sector and proactive governmental initiative demonstrate the success of diversification policies. Overall, these achievements indicate that the nation is progressing toward long-term sustainable goals, enhance economic resilience and an improved standard of living for its population.

Recent fact finding shows physical policy triggers that increase growth. Vast place-based industrial projects have long-term returns on the nature of employment, earnings and domestic productivity, a study published in the Quarterly Journal of Economics shows that long-term benefits of government-led manufacturing plants continue to the cohorts of people that grew up around treated sites (Garin et al., 2025). Infrastructure also plays a crucial role: physical infrastructure investment is strong in its support of growth, which explains why the focus on the transport and energy network is given priority (Timilsina, Stern, & Das, 2024). There are extra dividends of digital connectivity. Differences in differences assessments of the Chinese broadband implementation report have led to a higher level of efficiency in corporate investments and innovation to show that the elimination of digital disparities can increase the overall factor productivity (Wang, Peng, Kong, and Tan, 2025). Public R&D is a high-reward complement: the recent causal measures indicate that any reduction in public-research spillovers has a significant negative impact on the level of productivity in firms, which suggests that the long-term increasing public R&D and diffusion mechanisms are growth-promoting (Dy`evre, 2024). Where an excellent industrial policy should be enduring and innovation-efficient the recent micro-evidence suggests that policy persistence is positively associated with better local economic performance, and reviews of R&D subsidy policies suggest long-term gains in turnover, employment and improvement in patenting (Lin, Wang, & Xu, 2024). According to another study (Agasisti & Bertoletti, 2022), a positive role in the improvement of economic development can be played by higher education, as well. Orthogonally, all these studies indicate a practical package: industrial and digital

infrastructure goals of targeted nature, ongoing government R&D, and reformed education based on evidence.

This research contributes to the literature in economic development in several ways, as it brings the medical tourism, health spending, and governance as one piece of empirical analysis. Firstly, it improves on current literature by showing that medical tourism is not a foreign exchange earner, but also a driver to economic growth. The contribution is consistent with (Tang & Nathan Abdullah, 2018), who discovered that medical tourism has led to a long-run growth in Malaysia, through indicating how the diversification strategies play a significant part in the context where it relies on resources. Secondly, the paper represents health expenditure as a mediating mechanism as a result of which the medical tourism contributes to economic growth. As it empirically confirms this process, it adds up to the accumulating literature on the role of health system investment in enhancing the macroeconomic impacts of tourism, in line with (Uçak, 2016), who also reported the correlation between healthcare expenditure and health tourism revenues. Third, the paper brings new knowledge in regard to moderating role of governance. It shows that the quality of institutions enhances the positive correlation between medical tourism and economic development and overcomes the anxieties of (Beladi, Chao, Ee, & Hollas, 2015), who anticipated that poor governance would constrain the benefits of tourism. This observation has implications to policy formulation by highlighting the fact that without proper governance, medical tourism might fail to produce sustainable developmental results.

The primary objective of this study is to assess the impact of medical tourism, as the independent variable, on economic development in Saudi Arabia. A further objective is to examine the mediating role of health expenditure, determining whether increased healthcare spending serves as a channel through which medical tourism contributes to broader economic outcomes. In addition, the study aims to evaluate the moderating effect of governance, exploring whether stronger institutional quality enhances the positive relationship between medical tourism and economic development. Together, these objectives provide a comprehensive framework for understanding how sectoral growth, healthcare investment, and governance interact to shape long-term development.

The paper is structured into five main sections. The first section outlines the background, research problem, and objectives, establishing the rationale for examining medical tourism, health expenditure, and governance in the context of economic development. The second section presents a review of relevant literature, identifying theoretical perspectives and empirical gaps. The third section details the data, variables, and methodological framework, including mediation and moderation models. The fourth section reports and interprets the empirical findings, highlighting direct, indirect, and conditional effects. The final section provides conclusion, policy implications, limitations, and recommendations for future research directions.

Literature Review

Medical tourism and economic growth

Through the inputs and outputs model, (Klijs, Ormond, Mainil, Peerlings, & Heijman, 2016) show that medical tourism is a source of quantifiable benefits to the Malaysian state-level economic growth, one of the key factors in local development. It will build on this and, (Tang & Nathan Abdullah, 2018) address the short- and long-term interactions using bounds testing, cointegration, and Granger causality analysis and their evidence suggests that there is a unidirectional causal relationship between medical tourism and the general economic growth. This finding suggests that the growth of the sector has not only direct benefits on the GDP but also the spillover benefits that will help the general macroeconomic stability in the long-term. On a broader comparative level, (Beladi, Chao, Ee, & Hollas, 2019) examine the impact of medical tourism in 47 countries in 2007 to 2013. Their results indicate that the non-OECD economies receive a positive influence, whereas the OECD members are not impacted significantly, which explains the relevance of structural and developmental variations. They also warn that in the developing nations; medical tourism may lower productivity of labor as limited healthcare resources will be shifted to serve the foreign patients instead of the local one. The same caution is expressed by (Beladi et al., 2015; Jam et al., 2025), that hasten to impose the priorities on this industry,

risking to generate efficiency trade-offs in efficiency strained system of health, especially where there is an inadequate infrastructure and insufficient capacity.

Mediating role of health expenditure

There are few empirical firms covering the mediating role of health spending in relation to medical tourism and the level of economic growth but this does imply that under some institutional and economic settings this mediating mechanism holds some meaning. A study of medical tourism revenue based on a wide scope of emerging and developed economies (Gholipour & Esfandiar, 2025) shows that the contribution of medical tourism to GDP is significant where the focus on the spending of the health sector is large because this spending allows to increase the capacity, improve quality, and regulate the sphere. Linking domestic health and social work spending with health tourist revenue with the Granger causality tools (Uçak, 2016) conclude that health spending can result in health tourism income in the long term, which means that better-funded health systems will receive more patients and, consequently, improve the growth prospects of the industry. The (Ozyilmaz et al., 202 et al., 20252; Moghavvemi) study based in the EU can be also relevant to the issue: health spending (public, private, out-of-pocket) has a two-way causation with economic growth, and the comparative ranking reveals that government health spending is especially important. This study does not conduct a direct test of the medical tourism, however, the findings suggest that as medical spending increases it will robustly build health infrastructures and human capital that may moderate the reaction of medical tourism into extensive economic benefits. On the whole, these results indicate that health expenditure acts as an enabling factor, not only in increasing quality and capacity of serving a local and foreign population but also characteristics of increasing the spillovers of medical tourism into productivity, employment and growth.

Moderating role of governance

The role of governance quality in moderating medical tourism-economic growth relationship is a relatively young topic explored in literature, although closely related studies can also have valuable information. Research papers like the article of (Yue, Zubair, Usman, & Abro, 2023) entitled Host Countries Health System reveal that the institutional strength of the host nations which is in the form of political stability, corruption control, and quality of regulations define how tourism incomes result in the overall benefits of development. When there is a high level of governance, there is more certainty of spillover in infrastructure, human capital, and employment; when there is an insufficient level, risks are more dangerous: regulatory loopholes, imbalances, and reduced quality assurances (Labonté, Crooks, Valdés, Runnels, & Snyder, 2018). The chapter Government and Governance Strategies in medical tourism (Ormond & Mainil, 2015) states that the national and subnational governance strategies, including licensing, accreditation, cross-border regulation, and coordination of the public-private, influence the way the host countries can enjoy growth without compromising the equity and the system integrity of health. The institutions of governance also seem to influence not only the level but also the direction of effects: on one hand, medical tourism promotes productivity and investment in host countries with well-established regulations; on the other, they create distortions (e.g., excessive investment in specialized facilities at the cost of the national healthcare). The empirical evidence is that governance can moderate because it impacts on institutional trust, enforcement of regulations and alignment of medical tourism closer to other socio-economic policy.

Data and Methodology

Data

This research paper seeks to examine how medical tourism influences economic growth mediated by the health spending variable, and moderated by governance. To this end, 2000-2024 data is obtained. Table 1 provides the description of the variables used in the research, including those of abbreviations, indicators, and sources of data. The Economic Development (ED) is quantified by the Gross Domestic Product which is provided by the World Development Indicators (WDI). Medical tourism (MT) has been captured based on the medical tourism revenue and is commissioned by Euromonitor international as the sector has contributed to the economy. The Current health expenditure per capita

in US dollars defines health expenditure (HExp), with the data acquisition coming through WDI. Governance (Gov) is a compounded variable that results out of six World Governance Indicators that include voice and accountability, political stability and violence free/ terrorism, government effectiveness, quality of regulation, rule of law and control of corruption. Incorporating the total governance effect, the Principal Component Analysis (PCA) was used to produce one composite score (GOV). Energy Consumption (EC) is defined as the energy consumed in kilograms of oil equivalent per capita and Exports (Exp) are the changes in exports of goods and services expressed as a percentage per annum; both obtained at WDI. Lastly, WDI, also presented as Population (POP). This structured framework ensures the study relies on credible international datasets and aligns each variable with established economic and institutional indicators.

Table 1: Variable description

List of variables	Abbreviation	Indicators	Source
Economic development	ED	Gross Domestic Product	WDI
Medical tourism	MT	Medical tourism Revenue	Euromonitor International
Health Expenditure	HExp	Current health expenditure per capita (current US$)	WDI
Governance	Gov	Governance is composite measured using six indicators: voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption. Principal component analysis (PCA) was used to get the value of GOV.	WDI
Energy Consumption	EC	Energy use (kg of oil equivalent per capita)	WDI
Exports	Exp	Exports of goods and services (annual % growth)	WDI
Population	POP	Total Population	WDI

Model

To check the impact of medical tourism on economic development, Eq-1 is used whereas to check the mediating effect of health expenditure between medical tourism and economic development, Eq-2 and Eq-3 are used. However, to check the moderating role of governance, Eq-4 and Eq-5 are used.

$$lnED = \beta_0 + \beta_1 lnMT + \beta_2 Y + \varepsilon \quad \text{Eq-1}$$

$$lnHExp = \beta_0 + \beta_1 lnMT + \beta_2 Y + \sigma \quad \text{Eq-2}$$

$$lnED = \alpha_0 + \alpha_1 lnMT + \alpha_2 lnHExp + \alpha_2 Y + \sigma \quad \text{Eq-3}$$

$$lnGov = \beta_0 + \beta_1 lnMT + \beta_2 Y + \sigma \quad \text{Eq-4}$$

$$lnED = \delta_0 + \delta_1 lnMT + \delta_2 lnGov + \delta_3 (lnMT * lnGov) + \delta_4 Y + \pi \quad \text{Eq-5}$$

Where, $lnED$ is log of GDP, $lnMT$ is log of medical tourism, $lnHExp$ is log of health expenditure, $lnGov$ is log governance. Y denotes the control variables including energy consumption, exports and population.

Results

Descriptive statistics

Table 2 presents descriptive statistics where economic development shows moderate variation with a mean log value of 5.213, indicating steady national output levels. Medical tourism averages 2.471, suggesting consistent but still developing contributions to growth. Health Expenditure per capita demonstrates a relatively high mean of 7.916, reflecting the government's significant investment in healthcare services. Governance, with a mean of 0.428, shows improvement yet moderate variation across years. Energy Consumption records a high

average of 7.632, aligning with Saudi Arabia's energy-intensive economy. Exports of goods and services average 3.86% annual growth but show volatility with negative minimum values. Population remains stable with limited dispersion around 3.422.

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ED	24	5.213	0.388	4.623	5.882
MT	24	2.471	0.425	1.711	3.195
HExp	24	7.916	0.362	7.221	8.422
Gov	24	0.428	0.192	0.115	0.779
EC	24	7.632	0.315	7.052	8.195
Exp	24	3.865	2.173	–0.545	7.928
POP	24	3.422	0.211	3.082	3.723

Correlation analysis: Table 3 shows the results of correlation analysis. It is clearly seen that Economic development has a close relationship with medical tourism (0.614) and Health Expenditure (0.552), which is a confirmation of the significance of these areas in Economic growth. Governance has a moderate positive correlation with Economic development (0.423) and medical tourism (0.36), with institutional quality playing a part in contributing to the sectoral contribution. There is a strong correlation between Energy Consumption and Economic development (0.513) because the economy is energy-intensive. The Economic development has a weak yet positive relationship with the exports of goods and services (0.334). Most variables have negative relationships with population and this indicates that demographic pressure can water down per capita benefits of tourism, expenditure and governance.

Table 3: Correlation analysis

Variables	ED	MT	HExp	Gov	EC	Exp	POP
ED	1						
MT	0.614***	1					
HExp	0.552***	0.478**	1				
Gov	0.423**	0.364**	0.392**	1			
EC	0.513***	0.447**	0.414**	0.293*	1		
Exp	0.334**	0.274*	0.213	0.186	0.318**	1	
POP	–0.237	–0.182	–0.219	–0.153	–0.204	–0.114	1

Multicollinearity test

Table 4 represents the findings associated with multicollinearity. The results of the Variance Inflation Factor show that there are no issues of multicollinearity in the results as all the values are less than the mark of 10. VIFs of Health Expenditure and Medical tourism are somewhat higher; that is, there is some association, but that is very acceptable. The overall stability of the model and the dependability of the regression estimate of Saudi Arabia are supported by the mean VIF of 2.00.

Table 4: Multicollinearity test (VIF Results)

Variable	VIF	1/VIF
MT	2.414	0.415
HExp	2.671	0.374
Gov	1.926	0.521
EC	2.156	0.465
Exp	1.483	0.676
POP	1.377	0.729
Mean VIF	2.003	

Baseline regression

Table 5 indicates the findings of the baseline regression in which medical tourism exhibits positive and statistically significant effects on Economic Growth in all of the models with coefficients of 0.184 to 0.215. This further supports the argument that medical tourism is a driver of diversification in Saudi Arabia, which is consistent with results of (Tang & Nathan Abdullah, 2018), who found unidirectional growth of medical tourism in Malaysia. Energy Consumption is also a major determinant with coefficients of approximately 0.105 to 0.112 that is consistent with energy-based development trends that are observed in the oil economies (Apergis & Payne, 2010). Exports have a high positive impact, and coefficients of these ranges of 0.152 to 0.168 support the importance of external trade, which has been substantiated by many other studies, namely, export-led growth hypothesis (Hye & Lau, 2015).

Population is however a negative but in the insignificant relationship, indicating that population pressures can accordingly dilute per capita benefits but does not significantly contribute to growth which is also in agreement with (Bloom & Cannin, 2008), who propose that population growth can only support development in case it comes with structural adjustments. The adjusted R^2 (0.562- 0.603) indicates moderate explanatory power implying that though the medical tourism, energy consumption and exports are major factors, other institutional and structural variables are also applicable in ensuring long-term growth patterns.

Table 5: Baseline regression results

Variables	Economic Growth	Economic Growth	Economic Growth
MT	0.215*** (3.124)	0.184** (2.476)	0.207*** (2.891)
EC		0.112** (2.012)	0.105** (2.164)
Exp		0.168*** (2.918)	0.152** (2.381)
POP		−0.073 (−1.092)	−0.066 (−0.974)
Constant	2.734*** (10.211)	2.518*** (9.889)	2.612*** (9.958)
Time effect	Yes	No	Yes
Adj R^2	0.562	0.589	0.603

Mediating analysis using medical expenses as mediator

Findings of mediation analysis are as shown in Table 6. Medical tourism demonstrates strong positive correlation with Economic development as well as Health Expenditure, which is substantial evidence supporting the fact that it is a direct contributor to a nation development, and a direct stimulus of healthcare investment. The Medical tourism on Health Expenditure (0.260) coefficient implies that an increase in medical tourism revenues increases healthcare expenditures, which aligns with (Gholipour & Esfandiar, 2025) who believe that tourism inflows can raise the capacity and the quality of services when the health financing is in place. The mediating effect of Health Expenditure is positive (0.080) and it plays a significant role in Economic development. This pathway is supported by the Sobel test (p = 0.0054), which represents a partial mediation. The energy consumption is also pronounced as per models, which again reinforced the fact that Saudi Arabian economy is energy intensive. Exports are not statistically significant meaning that they are unlikely to influence the situation in the short term over the course of the study, but Population is always positive and significant indicating the advantages of an increase in the population through proper investment. Adjusted R^2 values increase to 0.602 as opposed to 0.541 and indicate that addition of Health Expenditure increases explanatory power.

Table 6: Mediation regression table: health expenditure as mediating variable

Variables	Economic development	Health Expenditure	Economic development
ED	0.210*** (0.067)	0.260*** (0.072)	0.135** (0.061)
MT	—	—	0.290*** (0.085)
MExp	0.095** (0.041)	0.120** (0.049)	0.080* (0.043)
EC	0.130** (0.056)	0.080 (0.062)	0.115** (0.054)
Exp	−0.070 (0.058)	0.040 (0.060)	−0.060 (0.057)
POP	2.400*** (0.230)	1.100*** (0.280)	1.850*** (0.320)
Adj R^2	0.541	0.497	0.602
Time effect	Yes	Yes	Yes
Sobel test		P = 0.0054	

Moderation analysis using governance as moderator

The Table 7 shows the results of the moderation analysis. Medical tourism has a major positive effect on Economic development in the base model but when Governance is introduced; the relationship between the two decreases which shows the institute factor. Economic development is positively related to governance, which is significant to note that quality of regulations and efficient institutions that influence

the outcomes of growth. Importantly, the interaction between the Medical tourism and Governance is positive and statistically significant, which proves that there is a moderation effect. This implies that Governance reinforces the effect of medical tourism on Economic development, that is, the higher the quality of the institutions the higher the contribution of the sector to Economic development. The fact that the adjusted R^2 increased by adding the interaction term to 0.624 also speaks in favor of the fact that the model is more explanatory when moderation is taken into account. These results are in line with (Ormond & Mainil, 2015b), who emphasize the influence of governance strategies to determine the nature of tourism outcomes, and (Ahmed, Kousar, Pervaiz, & Shabbir, 2022), who underline the importance of the institutional quality to determine sustainable economic outcomes of tourism.

Table 7: Moderation analysis results

Variables	Economic development	Governance	Economic development
MT	0.194** (2.364)	–	0.121* (1.951)
Gov	–	0.327*** (4.184)	0.208** (2.445)
(MT × Gov)	–	–	0.086** (2.094)
EC	0.117** (2.021)	0.074 (1.321)	0.098** (2.036)
Exp	0.102** (2.013)	0.061 (1.232)	0.085* (1.179)
POP	−0.054 (−0.921)	0.058 (1.137)	−0.042 (−0.871)
Constant	2.448*** (8.65)	1.692*** (6.592)	2.021*** (8.112)
Time effect	Yes	Yes	Yes
Adjusted R^2	0.537	0.481	0.624

Discussion

Results indicate that medical tourism significantly boosts Economic development in Saudi Arabia. The positive coefficient suggests that as medical tourism revenue increases, GDP grows, likely because inbound patients drive demand for specialized healthcare, raise foreign earnings, and stimulate ancillary sectors like hospitality and transport. Health Expenditure also emerges as a meaningful channel. Its positive and significant effect in the mediation model indicates that increased healthcare spending helps transmit the benefits of medical tourism into broader economic growth. In Saudi Arabia, rising spending from 4.4% to nearly 6% of GDP on health (from 2001 to 2021) underscores how government investment strengthens capacity in private and public sectors, improving quality of services that attract medical tourists (Nair, Mughal, Albejaidi, & Alharbi, 2024). Governance plays a critical role: the interaction between medical tourism and Governance is positive and significant. This means that stronger institutional quality amplifies the contribution of medical tourism to growth. In the KSA context, initiatives under Vision 2030 aimed at regulatory reform, licensing, and government effectiveness likely enhance this effect (Alasiri & Mohammed, 2022). Governance reforms ensure that funds channeled into healthcare are used efficiently, that safety and accreditation standards are upheld, and that corruption or regulatory obstacles do not erode the gains from the tourism-driven health sector.

Conclusion

The results of this paper show that medical tourism has a favorable effect on the economic development of Saudi Arabia, and it is in line with its importance as a significant diversification force within the context of Vision 2030. The findings indicate that the studies find that health expenditure is the mediator of this relationship, exposing that the payoffs of medical tourism are aggrandized when medical investments are effectively augmented.

This confirms the opinion that not only is better healthcare infrastructure strengthened to bolster domestic health outcomes, but also more international patients are drawn to this infrastructure, to create more macroeconomic advantages. Governance also reduces the correlation between medical tourism and economic development, and the interaction term implies that the better the institutional quality, the higher the role of this area to the total growth. Combined, these results influence the idea that medical tourism cannot solely provide the tool of efficient distribution of investments in health until quality governance frameworks are in place. It follows that the study offers a novel empirical finding that the results of sustainable development do entail sectoral development and institutional capacity to co-exist.

Policy implications

The findings indicate some of the policy directions that can be adopted in Saudi Arabia. To begin with, it is essential to reinforce the funds allocated to working on the infrastructure of the health sector because the economic impact of medical tourism increases due to the increased health spending. Cooperation between the healthcare facilities through the public-private partnerships will help to maintain the quality standards on the international level. Second, reforms in regulatory and governance have to be a continuous process, and the focused attention should be paid to transparency, accreditation, and mechanisms of monitoring. This will increase the global trust in the Saudi Arabian market of medical tourism and avoid the dangers of misappropriation. Third, by matching medical tourism drives with the Vision 2030, it makes the initiatives sustainable in the long-term since diversification of the economy should also be through Health and tourism comparative advantages. Lastly, specific marketing and bilateral agreements with relevant countries of medical tourism providers can drive more inflows, and the growth that does not discriminate will be achieved by incorporating the policies that consider both the domestic healthcare requirements and foreign demand.

Limitations and future research directions

The study has constraints of using aggregate national-level data of between 2000 and 2024 that limited its capacities of capturing the micro level variations across regions or institutions. An application of the secondary data can as well ignore the qualitative aspect like the perception of the patients and the quality of the services or informal governance practices that can determine the performance of the sector. Moreover, the healthcare sector has some possibility of differences in regulatory regulation that are not captured by the composite governance index, which is also comprehensive. Future studies should thus use data on individual firms or hospitals to work out how individual organizations lead to national results. Intercountry comparative analysis within the Gulf Cooperation Council countries may also be beneficial in establishment of regional dynamics and learning of policies. Besides, advanced econometric techniques like dynamic panel models or structural equation modeling would enhance causality. The development of the frame to evaluate social and environmental moderation of medical tourism would help to deepen the insights into the role of its development.

References

Agasisti, T., & Bertoletti, A. (2022). Higher education and economic growth: A longitudinal study of European regions 2000–2017. *Socio-Economic Planning Sciences*, *81*, 100940. https://doi.org/10.1016/J.SEPS.2020.100940

Akyüz, Y. (2017). *Global Economic Prospects: The Financial Crisis and the Global South*. https://doi.org/10.2307/j.ctt183pb3w.5

Alasiri, A. A., & Mohammed, V. (2022). Healthcare Transformation in Saudi Arabia: An Overview Since the Launch of Vision 2030. *Health Services Insights*, *15*. https://doi.org/10.1177/11786329221121214

Arab News. (2025). Saudi Arabia's revenue rises to $336bn in 2024 as non-oil income surges. Retrieved October 16, 2025, from https://www.arabnews.com/node/2590103/business-economy

Beladi, H., Chao, C. C., Ee, M. S., & Hollas, D. (2015). Medical tourism and health worker migration in developing countries. *Economic Modelling*, *46*, 391–396. https://doi.org/10.1016/J.ECONMOD.2014.12.045

Beladi, H., Chao, C. C., Ee, M. S., & Hollas, D. (2019). Does Medical Tourism Promote Economic Growth? A Cross-Country Analysis. *Journal of Travel Research*, *58*(1), 121–135. https://doi.org/10.1177/0047287517735909

Bitsadze, R. (2025). Multilateral development banks hit record $137 billion in climate finance to drive sustainable development worldwide. Retrieved September 10, 2025, from https://www.ebrd.com/home/news-and-events/news/2025/multilateral-development-banks-hit-record--137-billion-in-climat.html

Dy`evre, A. (2024). Public R&D Spillovers and Productivity Growth. *ECB Forum on Central Banking 2024*.

Garin, A., Rothbaum, J., Aizer, A., Bernhardt, D.,

Bernstein, A.-S. E., Borgschulte, M., … Taylor, L. (2025). The Long-Run Impacts of Public Industrial Investment on Local Development and Economic Mobility: Evidence from World War II. *The Quarterly Journal of Economics*, *140*(1), 459–520. https://doi.org/10.1093/QJE/QJAE031

Gholipour, H. F., & Esfandiar, K. (2025). Does medial tourism promote growth in healthcare sector? *European Journal of Health Economics*, *26*(2), 233–241. https://doi.org/10.1007/S10198-024-01700-3

Goldstein, H. N. (1977). *OECD Economic Outlook*. *Journal of Money, Credit and Banking* (Vol. 9). https://doi.org/10.2307/1992008

IMF. (2025). World Economic Outlook Update, July 2025: Global Economy: Tenuous Resilience amid Persistent Uncertainty. Retrieved September 10, 2025, from https://www.imf.org/en/Publications/WEO/Issues/2025/07/29/world-economic-outlook-update-july-2025?utm_source=chatgpt.com

Klijs, J., Ormond, M., Mainil, T., Peerlings, J., & Heijman, W. (2016). A state-level analysis of the economic impacts of medical tourism in Malaysia. *Asian-Pacific Economic Literature*, *30*(1), 3–29. https://doi.org/10.1111/APEL.12132

Labonté, R., Crooks, V. A., Valdés, A. C., Runnels, V., & Snyder, J. (2018). Government roles in regulating medical tourism: Evidence from Guatemala. *International Journal for Equity in Health*, *17*(1), 1–10. https://doi.org/10.1186/S12939-018-0866-1/METRICS

Lin, J., Wang, X., & Xu, M. (2024). Industrial policy persistence and local economic performance: The role of subsidy allocation in China. *Economic Modelling*, *141*, 106897. https://doi.org/10.1016/J.ECONMOD.2024.106897

McKinsey. (2024). Labor markets: Tight in advanced economies. Retrieved September 10, 2025, from https://www.mckinsey.com/mgi/our-research/help-wanted-charting-the-challenge-of-tight-labor-markets-in-advanced-economies

Nair, K. S., Mughal, Y. H., Albejaidi, F., & Alharbi, A. H. (2024). Healthcare Financing in Saudi Arabia: A Comprehensive Review. *Healthcare*, *12*(24), 2544. https://doi.org/10.3390/HEALTHCARE12242544

Ormond, M., & Mainil, T. (2015). Government and governance strategies in medical tourism. *Handbook on Medical Tourism and Patient Mobility*, 154–163. https://doi.org/10.4337/9781783471195.00025

Ozyilmaz, A., Bayraktar, Y., Isik, E., Toprak, M., Er, M. B., Besel, F., … Collins, S. (2022). The Relationship between Health Expenditures and Economic Growth in EU Countries: Empirical Evidence Using Panel Fourier Toda–Yamamoto Causality Test and Regression Models. *International Journal of Environmental Research and Public Health 2022, Vol. 19, Page 15091*, *19*(22), 15091. https://doi.org/10.3390/IJERPH192215091

Shalal, A. (2025). IMF nudges up 2025 growth forecast but says tariff risks still dog outlook. Retrieved September 10, 2025, from https://www.reuters.com/business/imf-nudges-up-2025-growth-forecast-says-tariff-risks-still-dog-outlook-2025-07-29/?utm_source=chatgpt.com

Tang, C. F., & Nathan Abdullah, A. S. (2018). Can inbound medical tourism boost Malaysia's economic growth? *Tourism and Hospitality Research*, *18*(4), 505–513. https://doi.org/10.1177/1467358416682069

Timilsina, G., Stern, D. I., & Das, D. K. (2024). Physical infrastructure and economic growth. *Applied Economics*, *56*(18), 2142–2157. https://doi.org/10.1080/00036846.2023.2184461

Uçak, H. (2016). The relationship between the growth in the health sector and inbound health tourism: the case of Turkey. *SpringerPlus*, *5*(1), 1685. https://doi.org/10.1186/S40064-016-3341-8

UNCTAD. (2025). *A World of Debt: Report 2025*. Retrieved from https://unctad.org/publication/world-of-debt

Winder, B. (2020). Challenges and Opportunities for the Saudi Economy. Retrieved October 16, 2025, from

https://carnegieendowment.org/sada/2020/06/challenges-and-opportunities-for-the-saudi-economy?lang=en&utm_source=chatgpt.com

Yue, G., Zubair, A., Usman, M., & Abro, M. A. (2023). Institutional Environment and Tourism: Moderating Role of Host Countries' Health System. *Journal of the Knowledge Economy*, *15*(2), 1. https://doi.org/10.1007/S13132-023-01163-6

Jam, F. A., Ali, I., Albishri, N., Mammadov, A., & Mohapatra, A. K. (2025). How does the adoption of digital technologies in supply chain management enhance supply chain performance? A mediated and moderated model. Technological Forecasting and Social Change, 219, 124225.

Moghavvemi, S., & Jam, F. A. (2025). Unraveling the influential factors driving persistent adoption of ChatGPT in learning environments. Education and Information Technologies, 1-28.