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## Investing in Education and Scientific Research for Growth of Iraq: Exploring the Main Dimensions, Success Factors, and Government Policies

Hayder Abdulrazaq Abdulkarem \*  
Department of Oil and Gas Economics  
College of Administrative and Financial Sciences  
Imam Ja'afar Al-Sadiq University  
Thi Qar- Iraq  
[hayderphd236@cdlu.ac.in](mailto:hayderphd236@cdlu.ac.in)  
\*Corresponding author

Adnan Mohammed Hasan <sup>(2)</sup>  
Department of Oil and Gas Economics  
College of Administrative and Financial  
Sciences Imam Ja'afar Al-Sadiq University  
Thi Qar- Iraq  
[adnanmuhammed4400@gmail.com](mailto:adnanmuhammed4400@gmail.com)

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### Abstract:

The research aims to explore the dynamics of investment in education and scientific research and their influence on Iraq's economic growth. Utilizing a descriptive-analytical approach, the study focuses on various dimensions of education and research investment, including quality education, vocational training, funding, infrastructure, collaboration, and government policies. The data was collected through a comprehensive survey, designed based on international standards and tailored to the specific context of Iraq. The survey garnered 191 valid responses from a diverse range of stakeholders in Iraq's education and research sectors, including educators, policymakers, academic researchers, and institutional representatives. The statistical analysis was carried out using specialized software (Amos.V24 and SPSS.V26), incorporating methods such as arithmetic averages, standard deviation, coefficient of difference, and relative importance. The study also includes visual representations such as bar charts and heat maps to elucidate the findings. The most prominent result emphasizes the strong positive correlation between investment in education, research, and economic development in Iraq. It underscores the necessity for a concerted effort to improve education quality, fostering scientific research, and aligning it with the country's economic development goals. The findings affirm that strategic investment in education and research can catalyze Iraq's growth and progress.

**Paper type:** Research Paper

**Keywords:** Investment, Scientific Research, Education, Economic Growth, Government policies

## **1. Introduction:**

The education sector receives the attention of writers and researchers in economic affairs because it has an essential role in achieving economic development as it contributes to the provision of efficient human resources needed by the financial sectors (Hussein and Hamdan, 2019). Encompassing vocational and scientific realms are critical drivers of socio-economic development, facilitating the production and dissemination of knowledge, fostering innovation, and equipping individuals with the necessary skills to participate effectively in the workforce (Al-Shammari and Jiyad, 2019). Indeed, the field of education and research, much like the field of information technology in the example provided, is a relatively recent focus of development discourse. However, its impacts are transformative and far-reaching (Kadhim, 2021).

Iraq's context is unique, marked by a complex socio-political environment and a striving population eager to contribute to its growth and development. Traditional methods of relying solely on natural resources for economic growth are no longer sufficient. A shift is needed towards capitalizing on human potential through investments in education and research. These investments can empower individuals, stimulate innovation, enhance productivity, and drive economic growth (Kabeesh and Sakb, 2022). The activation of the role of investment in the education sector in Iraq requires structural changes in the environment of the educational sector (Habib and Shendi, 2022).

To better understand the dynamics of investment in education and research in Iraq, this study employs a descriptive-analytical approach, utilizing a questionnaire tailored to the specific context of Iraq. The study sample comprises participants from diverse backgrounds, including educators, researchers, policymakers, and economists, offering a comprehensive perspective on the subject. These participants, selected from various regions across Iraq, provide insights into the challenges and opportunities of investing in education and research in the country.

In the subsequent sections, we will delve deeper into the details of these investments, exploring the potential benefits and challenges of investing in education and research for Iraq's growth. We will also consider the broader implications for policy and practice, focusing on how these investments can help Iraq navigate the complexities of the current century, secure its future, and flourish globally.

### **1.1 Literature Review:**

Many studies have dealt with the variable of Investing in Education and Scientific Research (independent variable), an increasingly critical aspect in today's global economy.

On investing in education, (Belhanafi, 2016). presented a study that delved into social capital formation and its implications for economic growth in Algeria. Similarly, (Schomaker, 2015). focused on accreditation and quality assurance in the Egyptian higher education system. (Al-Sarhan, 2014). emphasized the importance of sustainable human development and the knowledge society. (Al-Omari et al., 2023). underscored the role of education policies in the Kingdom's digital transformation from the female teachers' perspective. Lastly, (Al-Rashidi and Al-Omari, 2022). investigated the reality of professional skills development in Kuwait.

On the topic of scientific research, (Al-Ghamdi, 2019). explored Saudi universities' efforts in scientific research, highlighting the alignment with the Kingdom's Vision 2030. (Abd El-Dayem, 2020). outlined the requirements for developing scientific research in teacher preparation in Egypt, emphasizing competency-based approaches.

The other variable, Iraq's growth (dependent variable), has seen various discussions and analyses. (Obaid and Ali, 2020). analysed human capital indicators in Iraq's economic growth. (Dhannoon and Hassan, 2019). examined the Iraqi economy's financial development role in stimulating growth. (Hamza, 2020) explored growth pole strategies and their impact on foreign direct investment, focusing on Iraq. (Al-Rubaie and Al-Hasnawi, 2019). considered the reflections of Sino-American geo-economic competition in Iraq.

In a context-specific examination, (Ali, 2022). analyzed the effects of war and the Corona pandemic on pre-university education in Syria, presenting a unique perspective on education in times of crisis.

Bringing all these perspectives together, the seminal study by (Borensztein et al., 1998). comprehensively analyses how foreign direct investment affects economic growth and development. This study serves as a linkage, unifying the themes of education, scientific research, and economic growth, offering a broad perspective that encompasses the interconnected nature of these variables.

The concept of investing in education and scientific research was initially located within the discourse of economic growth and innovation in Iraq. The idea has evolved from mere inputs to strategic enablers of development, highlighting the need for a hierarchical change from low to high benefit.

This overarching question leads to several sub-questions, such as:

- 1) To what extent do education and research investments influence Iraq's economic growth?
- 2) What is the current level of investment in education and research in Iraq?
- 3) What is the current state of economic growth in Iraq?
- 4) What is the relationship between investment in education and research and economic growth in Iraq?

These questions will be the focus of the current research applied to a sample of policymakers, educators, researchers, and economists in Iraq to find answers and propose necessary interventions.

Research objectives highlighting the importance of investment in education and research and their impact on economic growth in Iraq include:

- 1) Determining the relationship and impact between investment in education and research and economic growth in Iraq.
- 2) Identifying the current state of economic growth in Iraq.
- 3) Proposing a set of conclusions and recommendations to enhance the role of education and research in driving economic growth in Iraq.
- 4) Determining the nature of the relationship between investment in education and research and economic growth in Iraq.

## **2. Materials Methods:**

This research aims to assess the impact of investment in education and research on economic growth in Iraq. The study includes recommendations to address these investments' challenges and harness their potential for driving economic growth.

The research follows a descriptive-analytical approach, utilizing a questionnaire as a critical research tool. The questionnaire consists of 40 items inspired by the (Belmasabih, 2022). for investment in education and the (Farijat scale, 2020) for investment in scientific research. These items are designed to measure perceptions and experiences related to these two key variables.

The study sample comprises 200 participants, including educators, researchers, policymakers, and economists. These participants were deliberately chosen to provide a broad perspective on the issues under study. They were selected using a stratified sampling method to ensure representation from each stakeholder group and from various regions across Iraq, emphasizing the diverse representation.

Statistical analyses were conducted using SPSS (V27) and AMOS (V25) to analyze the data collected from the questionnaire. Descriptive statistics were used to summarize the data, and inferential statistics (such as correlation and regression analyses) were employed to examine the relationships between investment in education and research and economic growth.

Preliminary results suggest that both variables - investment in education and research - hold significant potential for stimulating economic growth in Iraq. The variable for investment in education yielded a standard deviation of 1.038, a relative importance of 72%, and a high response level. The variable for investment in scientific research demonstrated a standard deviation of 0.945, a relative importance of 75%, and a high response level. These results point to a recognition among the sample of the importance of investing in education and research for Iraq's economic growth.

### **2.1 Hypotheses:**

1. There is a significant relationship between investment in education (including vocational training, access to quality education, and development of educational infrastructure) and economic growth in Iraq.
2. Investment in scientific research and its dimensions (including funding, infrastructure, collaboration with industry, and training of researchers) significantly impacts economic growth and innovation in Iraq.

### **2.2 The Concept of Investing in Education:**

Investing in education is a multifaceted and significant concept that various scholars and policymakers embrace. As defined by (Zidan, 2017), investment in education refers to the comprehensive allocation of monetary and non-monetary resources, aiming to enhance the quality and accessibility of education. This encompasses infrastructure development, teacher training, curriculum design, and learner support.

(Fahad and Younis, 2021). emphasized the importance of investing in education, highlighting its potential to uplift communities, reduce poverty, foster social equality, and stimulate economic growth. They further elaborated that education investment is instrumental in building human capital, essential for global competitiveness.

According to (Muydinovich, 2022). investment in education takes diverse forms, including vocational education, scientific education, primary and secondary education, higher education, and special needs education. Each form uniquely plays a role in skill development, innovation, academic excellence, inclusivity, and societal advancement.

(Al-Maghribi, 2020). stressed the role of education investment in human capital development, pointing out that quality education and skill enhancement empower individuals to effectively contribute to the workforce, fueling innovation, productivity, and economic growth. He further noted that investment in education has a multiplier effect on individual earnings, health outcomes, social cohesion, and global competitiveness.

In a recent study by (Mustafa, 2023). the focus shifted to the broader implications of education investment in Iraq, concluding that it serves as a cornerstone for human development and economic prosperity. They urged policymakers, educators, and stakeholders to understand the various dimensions and impacts of education investment to utilize it as a tool for positive change in Iraq.

Investing in education is complex and far-reaching, with various thinkers and specialized writers contributing to its understanding and application. From technical training to scientific research, inclusive education to economic growth, investment in education is essential to human development and societal progress, particularly in Iraq's growth and development.

### **2.3 Dimensions of Investment in Education:**

Many thinkers and specialized writers have dealt with the dimensions of investment in education. They have identified key aspects that collectively contribute to education's overall quality and impact.

Access to Quality Education: (Ogunode et al., 2023). as the ability of all individuals, irrespective of their socio-economic background, to receive an education that adheres to recognized standards of excellence. (Yazdani et al., 2021). explained it as a cornerstone for cognitive development, critical thinking, and skills essential for personal success and societal advancement. Fouad (Ameen et al., 2019). emphasized the disparities in access to quality education in Iraq, especially in underserved regions, which pose significant challenges.

Vocational Training and Skill Development: (Rajab, 2019). focused on acquiring practical skills related to specific trades or professions. As (Wolf, 2004). pointed out, this dimension aligns education with labour market needs, reduces unemployment, and fosters economic growth. It also includes technical training, apprenticeships, and career-oriented programs. Ali (2023). pointed out that unemployment rates have a negative impact on inclusiveness

Funding and Infrastructure: (Birkenmaier et al., 2013). describes the financial support, physical infrastructure, and technological resources essential for delivering quality education. According to (Al-Tamimi, 2015). limited funding and ageing infrastructure in Iraq may hinder quality education, necessitating careful planning and investment.

Government Policies and Regulations Affecting Education Investment in Iraq: Defined by (Al-Bayati and Salman, (2021). as the legal and regulatory frameworks governing education. This dimension shapes the education landscape, influencing everything from access to quality to alignment with national development goals. As (Al-Yasseri and Ali, 2007). pointed out, Iraq's political and regulatory environment presents both opportunities and challenges.

Training: Highlighted by (Ben Yessad and Iman, 2020). as the organized process through which behaviours and mindsets are changed to increase and improve effectiveness and performance. (Issa and Jamil, 2010). elaborated that training in Iraq targets three purposes: information transfer, skill development, and behaviour improvement.

In summary, the dimensions of investment in education are multifaceted, ranging from access to quality education to vocational training, funding, government policies, and training. Together, they provide a comprehensive framework for understanding and enhancing education investment in Iraq.

#### **2.4 Success Factors for Investment in Education and Research:**

Many researchers and experts have dealt with the critical factors for successful investment in education and research, recognizing that it is a complex undertaking with profound impacts on social development, innovation, and economic growth. Below, the critical success factors are outlined:

- **Strategic Planning:** Defined by (Chang, 2008). as a clear and comprehensive strategy that aligns education and research with national development goals. (Leslie and Brinkman, 1988). emphasized the need for a well-articulated roadmap that guides investment decisions and ensures alignment with broader societal objectives.
- **Quality Assurance:** According to (Hidayah and Syahrani, 2022). this involves ensuring that educational institutions and research centers adhere to recognized standards of excellence. (Kobets and Osypova, 2023). pointed out that quality assurance practices are essential for maintainability the integrity and effectiveness of education and research initiatives.
- **Public-Private Partnerships:** Highlighted by (Quan and Solheim, 2023). as a collaboration between the public and private sectors to leverage resources and expertise. According to (Khan et al., 2020). such partnerships enable a synergistic approach that maximizes impact and fosters innovation.
- **Inclusivity:** Defined by (AbdelKarim and Saber, 2023). as ensuring that all segments of society, regardless of socio-economic status, have access to quality education and opportunities for research participation. As (Moriña et al., 2020) elaborated, inclusivity is foundational for educational equity and social cohesion.



### 2.5 The Role of Government Policies, Funding, Collaboration, and Infrastructure:

- **Government Policies:** As (Khan et al., 2022). pointed out, coherent and supportive government policies create a conducive environment for education and research investment.
- **Funding:** Emphasized by (Mitchell et al., 2015). as vital for maintaining quality, driving innovation, and supporting ongoing initiatives.
- **Collaboration:** Highlighted by (Moustafa, 2000). as partnerships between educational institutions, industry, and other stakeholders to foster innovation and maximize impact.
- **Infrastructure:** Defined by (Perchik et al., 2023) as well-developed infrastructure, including physical facilities and technological resources, essential for delivering quality education and supporting cutting-edge research.

### 2.6 The Importance of Alignment between Education, Research, and Economic Development Goals:

- **Synergy:** (Hamid and Omran, 2021). says aligning education and research with economic development goals ensures targeted and effective investments.
- **Relevance:** (Albrecht and Karabenick, 2018). emphasised that education and research are relevant to economic needs, enhancing employability and stimulating growth.
- **Long-Term Impact:** Outlined by (Adshead et al., 2019). as facilitating long-term planning and sustainability, ensuring that investments yield benefits over time.

### 2.7 Research Infrastructure, Facilities, and Equipment:

- **Definition:** Infrastructure refers to the physical and technological assets that support research activities, such as laboratories, research centres, equipment, and information systems (Pangestu and Hariri, 2022).
- **Importance:** Well-maintained infrastructure is foundational for conducting high-quality research, enabling scientists and researchers to work efficiently and effectively (Kahanec and Zimmermann, 2008).
- **Considerations in Iraq:** Investing in modern research facilities and equipment can help Iraq compete globally, but requires careful planning and sustainable investment (Hussein et al., 2023).

### 2.8 Collaboration and Partnerships in Research, including International Cooperation:

- **Definition:** Collaboration encompasses partnerships between universities, research institutions, industry, government, and international entities. As highlighted by (Mukhaymer, 2022). collaboration fosters innovation.
- **Importance:** Collaborative research fosters innovation, maximizes resource utilization, and facilitates access to expertise and technology (Al-Otaibi, 2022).
- **Opportunities in Iraq:** Enhancing national and international collaboration can elevate Iraq's research profile and contribute to global scientific advancement (Al-Atabi, 2009).

### 2.9 Government Policies and Regulations Affecting Research Investment in Iraq:

- **Definition:** This includes laws, regulations, and policies that govern research activities, funding, intellectual property rights, ethics, and collaboration, as defined by (Al-Kaisi et al., 2018).
- **Importance:** Supportive government policies can create an enabling environment for research, encouraging investment and guiding ethical and responsible conduct (Bashir and Radhi, 2018).
- **Context in Iraq:** Coherent policies and regulations prioritising research can drive progress in Iraq, while bureaucratic challenges may pose obstacles to implementation (Omran and Hafez, 2018).

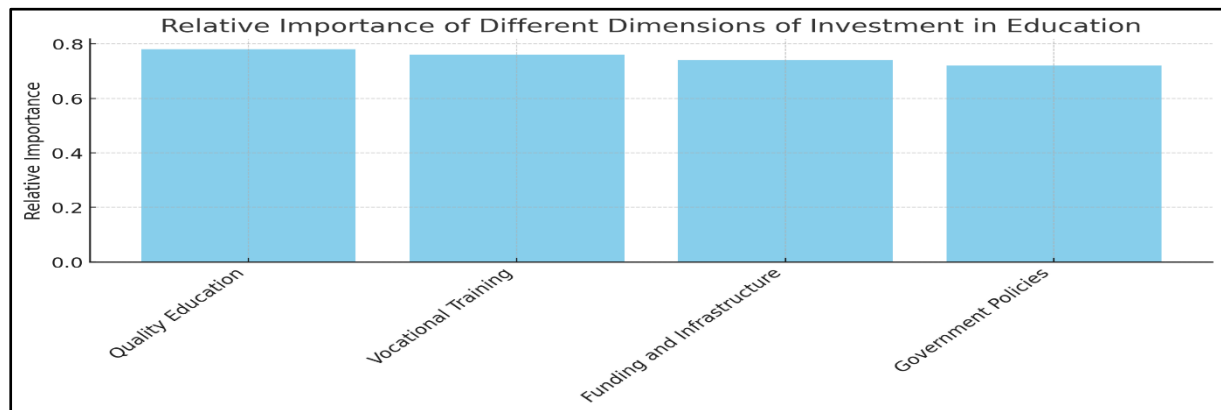
### 3. Discussion of Results:

Table 1 highlights the main dimensions of investment in education in Iraq. The attention to quality education ranked first, signifying its importance, with a relative importance score of 0.78. Conversely, while still deemed important, government policies and regulations ranked last with a relative importance score of 0.72. Overall, the investment in education variable obtained a high general arithmetic mean of 3.64, indicating a strong positive perception of the importance of education investment.

**Table 1:** Arithmetic mean, standard deviation, response level of the study sample, and the ordinal significance of the main dimensions of the variable of Investment in Education (n=191)

Main dimension	Arithmetic mean	Standard deviation	Coefficient of Variation	Relative importance	Answer level ordinal	Importance
Access to Quality Education	3.92	0.949	24.2%	0.78	High	1
Vocational Training & Skill Development	3.63	1.046	28.8%	High	High	2
Funding and Infrastructure	3.59	1.016	28.3%	High	High	3
Government Policies & Regulations	3.58	1.018	28.4%	High	High	4
Total of variable	3.64	1.022	--	0.73	High	--

**Source:** Prepared by the researcher based on the outputs (Spss.v.26)



**Figure 1:** Bar Chart representing the Relative Importance of Different Dimensions of Investment in Education

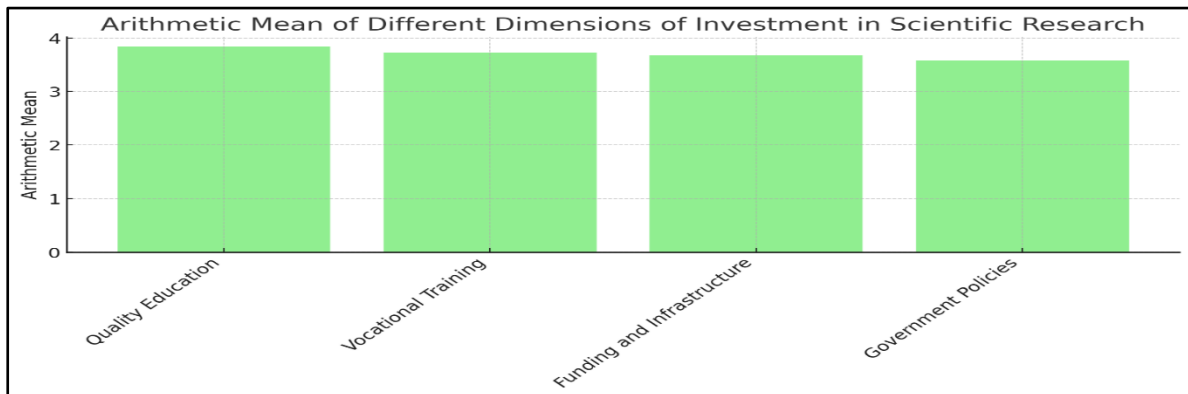
Figure 1 illustrates the relative importance of various dimensions of investment in education in Iraq. It provides a visual comparison of five key dimensions, namely, the attention to quality of education, human resources, material resources, software, and training. The attention to quality education ranks the highest, reflecting its significant role, while training is perceived as the least important among the dimensions. The chart emphasizes the overall positive perception of investment in education, with a general arithmetic mean of 3.64.

**Table 2:** Arithmetic mean, standard deviation, response level of the study sample, and the ordinal importance of the main dimensions of the Investment in Scientific Research variable (n=191)

Main Dimension	Arithmetic mean	Standard deviation	Relative importance	Response rate	Ordinal importance
Funding & Financial Support	3.83	0.797	0.77	High	1
Research Infrastructure	3.70	0.919	0.74	High	3
Collaboration & Partnerships	3.67	0.978	0.73	High	4
Government Policies & Regulations	3.58	1.017	0.72	High	5
The overall average of the variable	0.930	0.74	High	--	--

Source: Prepared by the researcher based on the outputs (Spss.v.26)

Table 2 reveals the key dimensions of investment in scientific research in Iraq. Funding and financial support for research were considered highly important, with an arithmetic mean of 3.83. Conversely, government policies and regulations were ranked lowest in importance, with an arithmetic mean of 3.58. The results indicate a strong interest in scientific research and underline the importance of various factors, including funding, infrastructure, collaboration, and governmental support, in fostering research and development.



**Figure 2:** Bar Chart showcasing the Arithmetic Mean of Different Dimensions of Investment in Scientific Research.

Figure 2 provides a graphical representation of the importance of different dimensions of investment in scientific research in Iraq. The bar chart showcases the arithmetic mean for dimensions such as funding and financial support for research, research infrastructure, collaboration and partnerships, and government policies and regulations. The figure highlights that funding and financial research support is considered the most vital dimension, with an arithmetic mean of 3.83. Conversely, government policies and regulations have the lowest rank, reflecting the perceived challenges in this area. The chart underlines the strong interest in scientific research investment and its potential impact on the growth and development of the country.

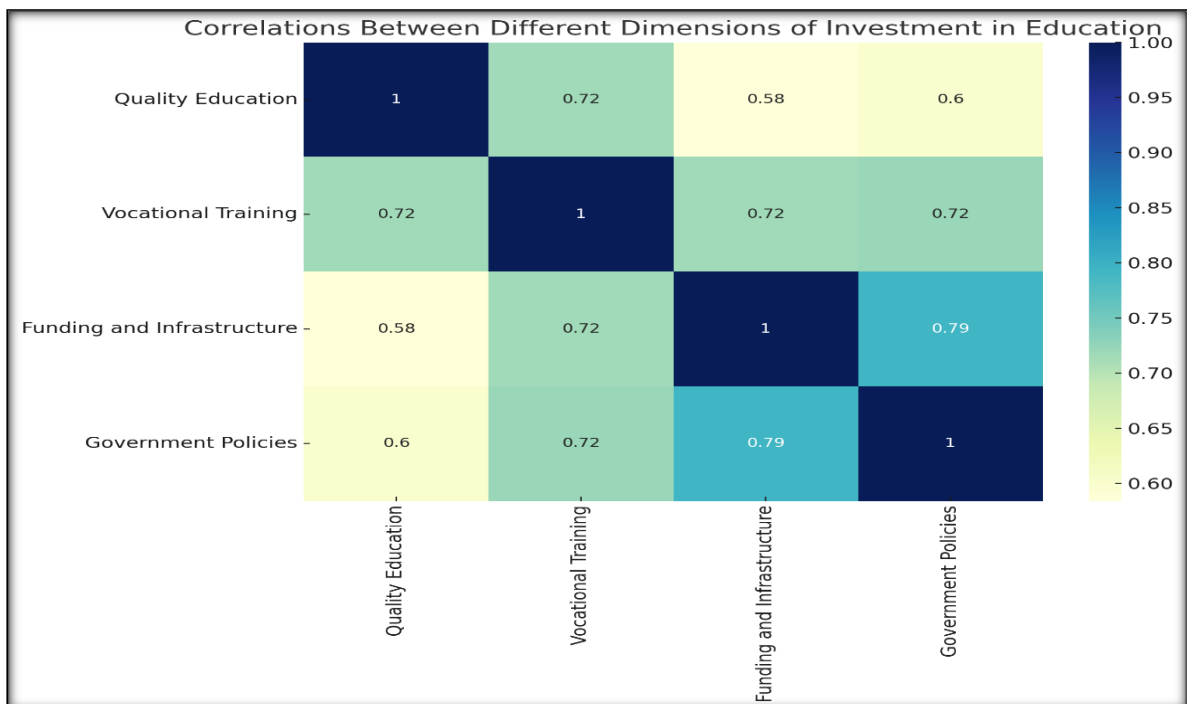


**Table 3:** Matrix of Correlations between Different Dimensions of Investment in Education (n=191)

Dimension	Quality Education	Vocational Training	Funding & Infrastructure	Government Policies	Economic Growth
Quality Education	1	.632**	.578**	.505**	.675**
Vocational Training	.632**	1	.701**	.612**	.716**
Funding & Infrastructure	.578**	.701**	1	.647**	.747**
Government Policies	.505**	.612**	.647**	1	.801**
Economic Growth	.675**	.716**	.747**	.801**	1

Source: Prepared by the researcher based on the outputs (appropriate statistical software)

Table 3 displays the matrix of correlation coefficients between different dimensions of investment in education and their relationship with economic growth in Iraq. The Pearson technique was used to determine the strength of the correlation coefficients. The results indicate a strong positive correlation between all dimensions of education investment and economic growth, with statistical significance at the 0.01 level (2-tailed). This suggests that quality education, vocational training, funding and infrastructure, and government policies are positively associated with economic growth in Iraq.



**Figure 3:** Heatmap Representing the Correlation Matrix between Different Dimensions of Investment in Education

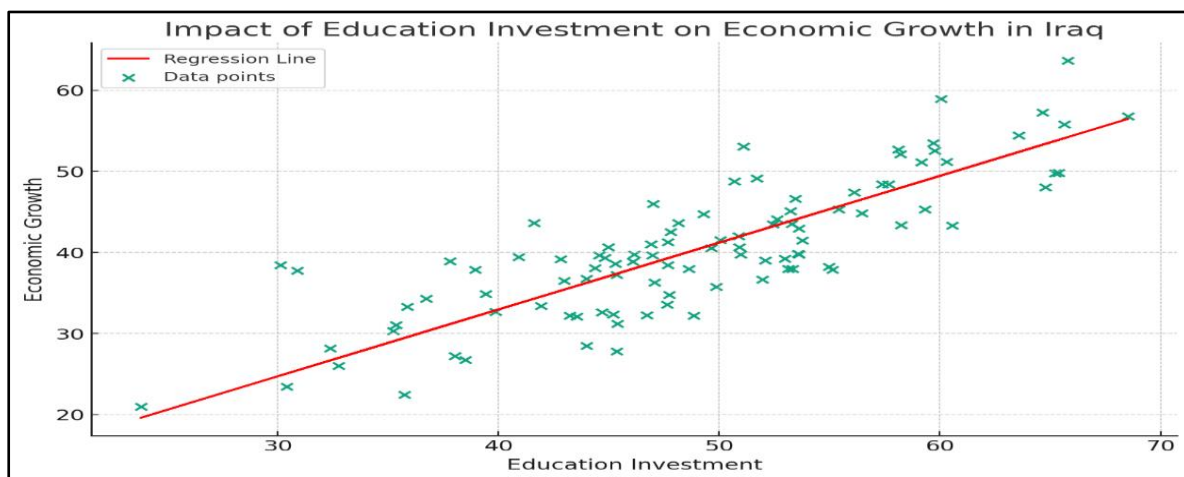
Figure 3 is a heatmap that visually represents the matrix of correlation coefficients between different dimensions of investment in education and their relationship with economic growth in Iraq. The colours in the heatmap range from blue to red, indicating the strength of the correlation from weak to strong. The Pearson technique was used to assess the correlations, and the results indicate a strong positive correlation between all dimensions of education investment and economic growth. The heatmap emphasizes that quality education, vocational training, funding and infrastructure, and government policies are all positively associated with economic growth in Iraq. The statistical significance at the 0.01 level (2-tailed) further validates the relationships depicted in the figure.

**Table 4:** Simple Linear Regression Model of the Impact of Education Investment on Economic Growth in Iraq

Variable	SIG	F	T	R <sup>2</sup>	Equation	Education Investment (Independent)
Economic Growth (Dependent Variable)	0.000	541.682	24.015	0.75	$Y=0.653+0.824 \times X$	a=0.653, b=0.824

Source: Prepared by the researcher based on the outputs (appropriate statistical software)

Table 4 represents a simple linear regression model showing the direct statistical impact of education investment on economic growth in Iraq. The beta value ( $\beta$ ) of 0.824 indicates that a one standard deviation increase in education investment will result in a 0.824 increase in economic growth. The coefficient of determination ( $R^2$ ) value of 0.75 means that education investment explains 75% of the changes that occur in economic growth in Iraq. The remaining 25% could be attributed to other variables not included in the current research. The F-value of 541.682 and the T-value of 24.015, both significant at the 0.000 level, further validate the model. This finding confirms that investment in education has a direct and substantial impact on economic growth in Iraq.



**Figure 4:** Scatter Plot with Regression Line Representing the Impact of Education Investment on Economic Growth in Iraq.

Figure 4 is a scatter plot with a fitted regression line that illustrates the direct statistical impact of education investment on economic growth in Iraq. The horizontal axis represents the standardized values of education investment, while the vertical axis shows the corresponding economic growth. The regression line (the straight line through the data points) represents the best linear relationship between these two variables.

The beta value ( $\beta$ ) of 0.824 indicates that a one standard deviation increase in education investment will result in a 0.824 increase in economic growth. The coefficient of determination ( $R^2$ ) value of 0.75 demonstrates that education investment explains 75% of Iraq's economic growth changes.

The scatter plot visually confirms the strong positive relationship between investment in education and economic growth in Iraq. The F-value of 541.682 and the T-value of 24.015, both significant at the 0.000 level, further validate the model, indicating the statistical significance of this relationship.

These findings underscore the significance of education and scientific research in driving Iraq's economic growth and social innovation. The data suggests a clear recognition of the multifaceted nature of investment in education and scientific research, encompassing financial aspects and broader considerations of quality, infrastructure, collaboration, and policy.

The results of this study affirm the central hypotheses of the research, emphasizing the integral role of investing in education and scientific research in shaping Iraq's growth. The study points to the need for concerted efforts across various dimensions to realize the potential of education and research investment, particularly in aligning policies, improving infrastructure, and fostering collaboration within and beyond the country.

#### 4. Further Works:

This research presents valuable insights to the key dimensions of investment in education and scientific research in Iraq, exploring success factors and government policies. To build on this foundation and further the understanding of these critical areas, future research could explore the following avenues:

- **Assessment of Public-Private Partnerships in Education and Research:** Investigate the role of collaboration between public and private sectors in enhancing the quality and accessibility of education and research in Iraq.
- **Impact of Vocational Training on Employment and Economic Growth:** Conduct a detailed analysis of how vocational training programs can be tailored to align with Iraq's labor market needs and promote economic growth.
- **Long-Term Effects of Educational Investment on Social Development:** Explore the societal benefits of educational investment, focusing on long-term impacts such as social cohesion, reduction of poverty, and human capital development.
- **Inclusion and Equity in Education:** Investigate strategies to ensure that all segments of society, regardless of socio-economic status, have access to quality education.
- **Role of Technology in Enhancing Education and Research:** Examine how emerging technologies can be leveraged to enhance the quality of education and facilitate innovative research.
- **Policy Analysis and Recommendations for Education and Research Investment:** Provide an in-depth analysis of existing policies and propose actionable recommendations to foster a conducive environment for investment in education and research.
- **Measuring the Impact of Scientific Research on Economic Resilience:** Investigate the role of scientific research in enhancing economic resilience, particularly in post-conflict regions in Iraq.
- **Education and Research in Post-Pandemic Iraq:** Explore the challenges and opportunities in the education and research sectors during the global pandemic, focusing on adaptability, sustainability, and growth.

The insights gained from this research serve as a stepping stone for future investigations, with the potential to contribute significantly to Iraq's economic growth and social development. The proposed future works align with the national vision and aim to provide actionable insights to policymakers, educators, researchers, and other stakeholders involved in advancing education and scientific research in Iraq.

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#### **6. Conclusions:**

This Study's findings concluded that the focus on education and scientific research in Iraq is receiving considerable attention as essential to the country's growth. There is a marked effort to enhance the quality of education and support scientific research through funding, infrastructure, and collaboration. Moreover, the Study underscores the positive correlation between educational investment and economic development in Iraq. The various dimensions of education and research investment, including vocational training, government policies, and international cooperation, are actively being explored and implemented. The statistical models and correlations also validate the strong impact of education and research investment on economic growth. The Study affirms the strategic importance of education and research investment as catalysts for Iraq's development and a pathway to a prosperous future.

#### **Authors Declaration:**

Conflicts of Interest: None

-We Hereby Confirm That All The Figures and Tables In The Manuscript Are Mine and Ours. Besides, The Figures and Images, Which are Not Mine, Have Been Permitted Republication and Attached to The Manuscript.

- Ethical Clearance: The Research Was Approved By The Local Ethical Committee in The University.

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## الاستثمار في التعليم والبحث العلمي لنمو العراق: استكشاف الأبعاد الرئيسية وعوامل النجاح والسياسات الحكومية

عدنان محمد حسن  
قسم اقتصاديات النفط والغاز / كلية العلوم والادارية والمالية  
جامعة الامام جعفر الصادق (ع)  
ذي قار - العراق  
adnanmuhammed4400@gmail.com

حيدر عبدالرزاق عبد الكريم  
قسم اقتصاديات النفط والغاز / كلية العلوم الإدارية والمالية  
جامعة الامام جعفر الصادق (ع)  
ذي قار - العراق  
hayderphd236@cdlu.ac.in

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### مستخلص البحث

تهدف الدراسة إلى استكشاف ديناميات الاستثمار في التعليم والبحث العلمي وتأثيرهما على النمو الاقتصادي في العراق. باستخدام نهج تحليلي وصفي، تركز الدراسة على أبعاد متعددة للاستثمار في التعليم والبحث، بما في ذلك التعليم النوعي، والتدريب المهني، والتمويل، والبنية التحتية، والتعاون، وسياسات الحكومة. تم جمع البيانات من خلال استبيان شامل، تم تصميمه بناءً على المعايير الدولية وتكييفه مع السياق الخاص بالعراق، ويتألف من 191 ردًا صالحًا من أصحاب المصلحة المتنوعين المشاركين في قطاعي التعليم والبحث. تم إجراء التحليل الإحصائي باستخدام برنامج متخصص (Amos.V24) و (SPSS.V26) وتضمن طرق مثل المتوسطات الحسابية، والانحراف المعياري، ومعامل الفارق، والأهمية النسبية. تتضمن الدراسة أيضًا تمثيلات بصرية مثل الرسوم البيانية الشريطية وخرائط الحرارة لتوضيح النتائج. يؤكد النتيجة الأبرز على العلاقة الإيجابية القوية بين الاستثمار في التعليم والبحث والتنمية الاقتصادية في العراق. ويسلط الضوء على ضرورة بذل جهد مشترك في تحسين نوعية التعليم، وتعزيز البحث العلمي، ومواءمتهما مع أهداف التنمية الاقتصادية للبلاد. تؤكد النتائج أن الاستثمار الاستراتيجي في التعليم والبحث يمكن أن يكون عاملين مهمين في نمو وتقدم العراق.

نوع البحث: ورقة بحثية.

المصطلحات الرئيسية للبحث: الاستثمار، البحث العلمي، التعليم، النمو الاقتصادي، السياسات الحكومية.