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The Relationship between Human Development and Economic Diversification: A Comparative Study of Selected Arab Countries (Tunisia, Algeria, Saudi Arabia, Egypt) from 1995 to 2020

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Abstract:

The topic of human development is one of the most important subjects that attracts the attention of researchers in economic, social, and political fields. International organizations, particularly the United Nations Development Programme, consider human development a fundamental right for people, similar to other rights. Human development focuses on providing both the material and moral needs of individuals. Sustainable economic growth is essential for achieving human development, and countries strive to achieve this growth through economic diversification, which has become the primary solution for transitioning away from a rentier economy. In this research, we aim to answer the question: What is the relationship between economic diversification and human development? We will also explore the concepts of economic diversification and human development, and determine the direction of influence between economic diversification and human development indicators. This will be done through a comparative study of a group of Arab countries (Tunisia, Algeria, Saudi Arabia, Egypt) during the period from 1995 to 2020.

Keywords: Economic diversification, economic growth, human development, human development indicators.

Introduction:

Human development is one of the most contemporary subjects that has captured the attention of thinkers and practitioners in the field of management. The human element is the true wealth of any nation, and the purpose of human development is to create an environment that enables people to enjoy long and healthy lives. To achieve human development, it is essential to focus on individuals, enhance their capabilities, and invest in them through health, education, and improved living standards, which help them achieve advancements in all fields. Individuals, with their intellect and capabilities, are the most profitable productive elements, and attention to them ensures that a country achieves acceptable human development rates, becoming the driving force for progress and advancement.

Human development is linked to the country's total income; countries with high income levels tend to have high human development indicators. Human development is related to economic diversification, which is the fundamental alternative adopted by countries, especially developing ones, to restructure their economies and make them more diverse, moving away from a rentier economy. A diversified economy is more stable and grows, unlike an economy dependent on a single income source, which is prone to economic crises, leading to a decline in human development indicators.

This research paper aims to conduct an analytical study to demonstrate the impact of economic diversification on human development indicators for Algeria, Tunisia, Egypt, and Saudi Arabia during the period from 1995 to 2020. The research is divided into three main sections: the first section addresses economic diversification, the second section deals with human development, and the third section presents the research findings.

Research Problem: What is the relationship between human development rates and economic diversification?

Research Hypothesis: There is a positive relationship between economic diversification and human development rates.

Study Objectives:

- To understand the concepts of economic diversification and human development.
- To determine the direction of influence between economic diversification and human development rates.
- To analyze the impact of changes in economic diversification rates on human development in Algeria, Egypt, Tunisia, and Saudi Arabia during the period from 1995 to 2020.

Methodology: To prove or disprove the research hypothesis, we used a descriptive analysis to highlight the importance of economic diversification in achieving good human development rates. We relied on annual time series and statistics available from the World Bank, using Stata15 software to estimate panel data models and conduct the necessary tests and approaches to derive the results.

Section One: Economic Diversification

Economic diversification is the primary and fundamental goal that countries, especially rentier states (those that rely heavily on oil), strive to achieve to ensure the stability and growth of their economies. In this section, we will address the concept of economic diversification, its importance, goals, and requirements for achieving it.

First: Definition of Economic Diversification

Economic diversification has various definitions depending on the perspective. Here are some of the key definitions:

- "The process of exploiting all resources and local production capacities to achieve self-sufficiency, capable of generating renewable resources, reaching a stage where local production controls the domestic market, and subsequently diversifying exports." (Mohamed Karim Garouf, 2016, p. 638)
- "Reducing reliance on the oil sector and its revenues by developing a non-oil economy, non-oil exports, and other sources of income, while simultaneously reducing the role of the public sector and enhancing the role of the private sector in development." (Atif Lafi Marzouk, Abbas Maki Hamza, 2014, p. 57)
- "A process aimed at reducing the contribution of oil to GDP and government revenues by developing non-oil sectors, reducing the role of the government sector, and enhancing the contribution of the private sector to economic activity." (Ibrahim Belkela, 2015, p. 234)

Second: Importance of Economic Diversification

The importance of economic diversification includes the following points:

- Building a sustainable economy for current and future generations, independent of oil, while encouraging the private sector and foreign investment.
- Achieving balanced regional and social economic development.
- Ensuring budget stability by activating other productive sectors.
- Encouraging the implementation of future plans by providing the necessary expertise, both local and foreign, administrative institutions, and social environment through the required funds.
- Increasing labor productivity and human capital, leading to higher economic growth rates.
- Increasing investment opportunities while reducing risks associated with concentrating investments in specific sectors.
- Reducing the risks of declining export revenues and the resulting weakening of import financing, a situation that always accompanies concentrated exports in a limited number of products.
- Strengthening the interrelationships between productive sectors. (Ben Abdel Fattah Dahman, Bellaama Asma, 2018, p. 333)

Third: Goals of Economic Diversification

Economic diversification plays a crucial role in developing, stabilizing, and growing the economy. The applied economic diversification policies aim to achieve several objectives, summarized as follows:

- Reducing economic risks and the ability to deal with external crises and shocks, such as fluctuations in raw material prices or drought for agricultural and food products, or economic downturns in global markets, especially in partner countries (like European countries for Arab states).
- Ensuring the continuity of development by developing multiple and diverse sectors as sources of income, foreign currency, and public budget revenues, increasing their added value in GDP, and encouraging investment in them.
- Strengthening the links between economic sectors, thus achieving economic stability.
- Achieving self-sufficiency in goods and services, increasing exports, and reducing reliance on imports of consumer goods.
- Providing job opportunities, thereby improving individuals' living standards and reducing unemployment. (Heiko Hesse, 2008, p. 2)

Fourth: Requirements for Economic Diversification

Achieving economic diversification requires several requirements that form its foundations, including:

1. Focusing on the human resource base and developing human capital.
2. Providing the necessary financial resources for economic diversification.
3. Ensuring a stable macroeconomic environment and reforming and coordinating financial and credit policies.
4. Activating the role of the private sector and enhancing the business environment.
5. Investing in infrastructure, education, and skills.
6. Promoting entrepreneurship through small and medium enterprises.
7. Encouraging innovation and initiative by improving access to information.
8. Strengthening the legal and regulatory environment and encouraging private investment, both local and foreign.
9. Reforming the labor market and reorganizing incentives for companies and the workforce.
10. Developing advanced educational curricula that focus on intelligence, skill enhancement, and alignment with employment requirements. (Atif Lafi Marzouk, Abbas Maki Hamza, 2014, p. 77)

Section Two: Human Development

Recent years have seen unprecedented attention to human resources, with the human capital of countries becoming their most valuable asset. The relationship between human elements and development is close, shifting the concept of development from an economic focus on increasing real per capita income to a social and human focus on the individual. In this section, we will explore the concept of human development, its goals, and its obstacles.

First: Definition of Human Development

Human development has many definitions, including:

- Mahbub ul Haq defines it as: "Increasing people's choices, with income being just one of these choices. It is about developing people for people and by people themselves." (Ibrahim Al-Du'ma, 2016, p. 16)
- Paul Streeten views human development as "improving human conditions, expanding people's choices, and considering human beings as ends in themselves." (Ibrahim Al-Du'ma, 2016, p. 16)

- Human development can also be defined as: "Developing human capacities and competencies, and providing choices and opportunities for them, with justice, objectivity, freedom, equality, transparency, accountability, and effective and responsible decision-making." (Ali Al-Turrah and Ghassan Sinu, 2002, p. 7)

- The commonly accepted definition by the United Nations Development Programme (UNDP) in 1990 defines human development as: "The process of enlarging people's choices, which are limitless and change over time."

Key choices include:

- Living a long and healthy life.
- Accessing knowledge.
- Obtaining necessary resources to ensure a decent standard of living.
- Enjoying political, social, economic, and cultural freedom.
- Feeling secure.
- Having opportunities for creativity and productivity. (Abdullah Atwi, 2004, p. 23)

Second: Goals of Human Development

- Eradicating hunger and improving nutritional levels.
- Reducing poverty.
- Facilitating access to education for all members of society.
- Working to eliminate illiteracy and ignorance.
- Providing job opportunities and creating suitable working conditions, especially in rural and urban areas, to eradicate unemployment.
- Improving health levels, particularly for children and pregnant women.
- Providing shelter for low-income individuals.
- Raising individuals' living standards by increasing their incomes.
- Helping individuals meet various needs.
- Ensuring political and economic freedom. (Abu Al-Hassan Abdul-Majid Ibrahim, 2006, p. 222)

Third: Obstacles to Achieving Human Development

- High population growth rates relative to production.
- Widespread illiteracy and low educational levels.
- Poor health standards and malnutrition in society.
- Lack of social security systems, social justice, and equal opportunity.
- Poor use of leisure time.
- Uneven geographical distribution of the population. (Abu Al-Hassan Abdul-Majid Ibrahim, 2006, p. 236)

Fourth: Dimensions of Human Development

1. **Equity:** Equity lies at the heart of human development, emphasizing equal opportunities and focusing on inputs rather than outcomes. This includes:

- Adjusting the distribution of ownership of productive assets.
- Making structural changes in tax burdens.
- Reforming and developing the banking system.
- Ensuring equal political opportunities.
- Removing social and legal barriers that prevent women from accessing certain political and economic positions.

2. **Productivity:** Improving productivity and the fair distribution of public resources is essential for development, as it enhances economic growth opportunities. Human development focuses on increasing growth and productivity in conjunction with human development by:

- Investing in health and education and developing people's skills.
- Ensuring fairer distribution of income and productive assets.
- Continuously creating better job opportunities.
- Implementing appropriate social spending policies. (Ibrahim Ramadan Al-Deeb, 2006, p. 60)

3. **Sustainability:** Sustainability involves comprehensive economic, trade, social, and environmental policies to ensure continuous development. This includes:

- Avoiding passing on economic, social, or environmental debts to future generations.
- Rationalizing the investment of natural resources, which requires adjusting growth patterns, rates, and technologies used.
- Modifying consumption patterns that waste natural resources, especially non-renewable ones.

4. **Empowerment:** Human development views people as active participants in social change, not just beneficiaries. Empowerment is a core principle of development, enabling people to exercise their freely made choices, such as:

- Ensuring political democracy, allowing them to influence decisions affecting their lives.
- Providing economic freedom, freeing people from excessive legal constraints hindering their economic activities.
- Involving all citizens, especially non-governmental organizations, in decision-making and developing development plans. (Ibrahim Ramadan Al-Deeb, 2006, p. 61)

Section Three: Collected Data

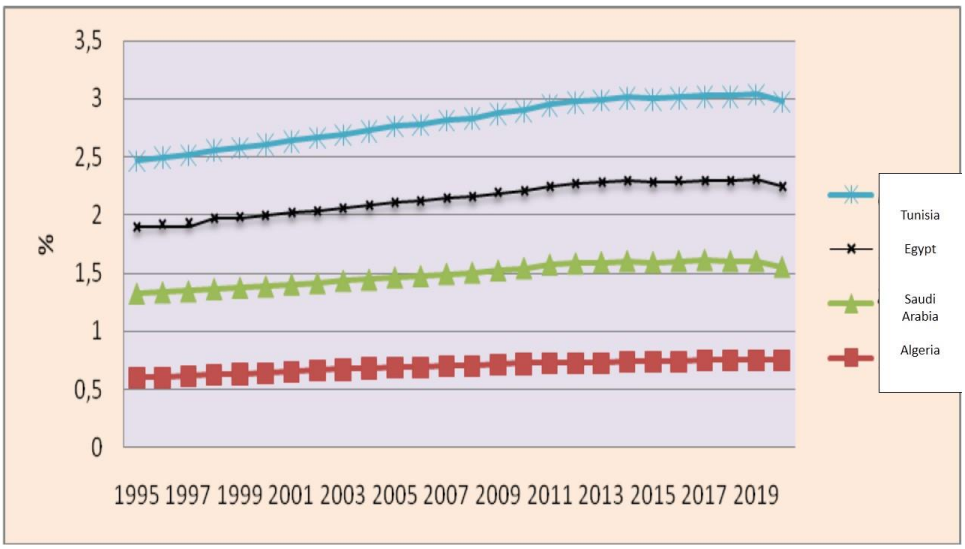
Table 01: Dependent Data for the Countries under Study (1995-2020)

Years	Algeria%	Saudi Arabia%	Egypt%	Tunisia%
1995	0,6	0,72	0,58	0,567
1996	0,6	0,73	0,59	0,573
1997	0,61	0,73	0,59	0,581
1998	0,62	0,74	0,61	0,587
1999	0,63	0,74	0,61	0,598
2000	0,64	0,74	0,62	0,605
2001	0,65	0,75	0,62	0,614
2002	0,66	0,75	0,63	0,621
2003	0,67	0,76	0,63	0,632
2004	0,68	0,76	0,64	0,643
2005	0,69	0,77	0,65	0,651
2006	0,69	0,78	0,65	0,659

2007	**0,7**	**0,79**	**0,66**	**0,664**
2008	**0,7**	**0,8**	**0,66**	**0,671**
2009	**0,71**	**0,81**	**0,67**	**0,681**
2010	**0,72**	**0,82**	**0,67**	**0,688**
2011	**0,73**	**0,84**	**0,68**	**0,694**
2012	**0,73**	**0,85**	**0,69**	**0,7**
2013	**0,73**	**0,86**	**0,69**	**0,707**
2014	**0,74**	**0,86**	**0,7**	**0,709**
2015	**0,74**	**0,85**	**0,69**	**0,716**
2016	**0,74**	**0,86**	**0,69**	**0,718**
2017	**0,75**	**0,86**	**0,69**	**0,72**
2018	**0,75**	**0,85**	**0,7**	**0,723**
2019	**0,75**	**0,85**	**0,71**	**0,726**
2020	**0,75**	**0,8**	**0,7**	**0,729**

Source: Compiled by the researcher based on World Bank data.

Figure 01: Human Development Index (%) - Algeria, Saudi Arabia, Egypt, Tunisia (1995-2020)



Source: Compiled by the researcher based on World Bank data.

From the figure, we observe that the Human Development Index (HDI) for the four countries is similar and shows a slow increase. In 1995, the HDI values were 0.6 for Algeria, 0.72 for Saudi Arabia, 0.58 for Tunisia, and 0.56 for Egypt. By 2020, these values reached 0.75 for Algeria, 0.8 for Saudi Arabia, 0.72 for Tunisia, and 0.7 for Egypt, which are decent percentages for developing countries.

Third: Analysis of Results and Discussion

The HDI is expressed in terms of the share of the manufacturing sector, the share of the agricultural sector, the added value of high-tech industries, the export concentration index, GDP growth, and government spending according to the following equation:
HDI = f (TI, AGR, HTI, EXPC, GDPgr, GGEgr)

Model Comparison for Human Development

1. **Fisher Test**:

- H0: The null hypothesis: The pooled regression model (PRM) is better.
- H1: The alternative hypothesis: The fixed effects model (FEM) is better.
- Since Prob(F) = 0.001 < 0.050, we accept H1 and reject H0, indicating that the FEM is better.

2. **Breusch-Pagan Test**:

- H0: The PRM is better.
- H1: The random effects model (REM) is better.
- Since Prob(Chi) = 1.000 > 0.05, we reject H1 and accept H0, indicating that the PRM is better.

From the Fisher test, we found that the FEM is better, while from the Breusch-Pagan test, we found that the PRM is better. In this case, we lean towards accepting the FEM.

3. **Hausman Test**:

- H0: The null hypothesis: The REM is better.
- H1: The alternative hypothesis: The FEM is better.
- Since Prob(Chi) = 0.041 < 0.050, we accept H1 and reject H0, indicating that the FEM is better for analyzing the HDI model.

Analysis and Interpretation of Results

Regarding the HDI model, we observe a positive effect of government spending and export concentration, which is statistically significant at 1%. This result aligns with economic theory and empirical literature, suggesting that increased government spending, particularly on education and health and various social transfers, enhances the dimensions of human development, such as a long and healthy life and a decent standard of living. Additionally, export concentration (lack of export diversification for the studied countries) positively impacts human development through the effects of international trade specialization, economies of scale, increased production, expanded investment, increased employment, and higher per capita income. Consequently, this improves individuals' and families' ability to meet various needs and desires.

Conversely, contrary to economic theory, the increase in the manufacturing sector's share of the output negatively impacts human development.

Conclusion

From this study, we conclude that the relationship between human development and economic diversification is positive. Increasing components of economic diversification leads to higher human development indicators. Specifically, increased government spending, particularly on education and health, enhances human development dimensions, ensuring a long and healthy life and a decent standard of living. Furthermore, increased export concentration leads to higher human development through increased production, expanded investment, increased employment, and higher per capita income, ultimately improving individuals' and families' ability to meet various needs and desires.

We observed that the HDI for the studied countries is similar and slowly evolving due to the slow pace of economic diversification indicators. For countries seeking to achieve good human development indicators, economic diversification is crucial to achieve economic stability and growth, move away from a rentier economy, and achieve economic development. The studied countries should restructure their economies by adopting economic, social, and political reform policies.

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Appendices:

Table 02: Results of the Estimation of the Pooled Regression Model (PRM) for the Human Development Index (HDI)

```
. regress hdi ti  agr hti expc ggegr gdpgr
```

Source	SS	df	MS	Number of obs	=	104
				F(6, 97)	=	101.94
Model	.489629729	6	.081604955	Prob > F	=	0.0000
Residual	.077652079	97	.000800537	R-squared	=	0.8631
				Adj R-squared	=	0.8546
Total	.567281808	103	.00550759	Root MSE	=	.02829

hdi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ti	-.0013315	.0001857	-7.17	0.000	-.0017	-.0009629
agr	-.0095906	.0011492	-8.35	0.000	-.0118716	-.0073097
hti	.0017453	.0004158	4.20	0.000	.0009201	.0025706
expc	.0001849	.0000227	8.13	0.000	.0001398	.0002301
ggegr	3.59e-13	1.20e-13	3.01	0.003	1.22e-13	5.97e-13
gdpgr	-.0037716	.0010144	-3.72	0.000	-.0057848	-.0017583
_cons	.7554933	.0156444	48.29	0.000	.7244435	.7865432

Source: Stata15 program outputs

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Table 03: Results of the Estimation of the Fixed Effects Model (FEM) for the Human Development Index (HDI)

```
Fixed-effects (within) regression               Number of obs      =       104
Group variable: pays                            Number of groups   =         4

R-sq:                                           Obs per group:
     within  = 0.7643                                         min =        26
     between = 0.8243                                         avg =      26.0
     overall = 0.6621                                         max =        26

                                                F(6,94)            =     50.80
corr(u_i, Xb)  = 0.3507                         Prob > F           =    0.0000

------------------------------------------------------------------------------
         hdi |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          ti |  -.0007929   .0002341    -3.39   0.001    -.0012577   -.0003281
         agr |  -.0006886   .0027494    -0.25   0.803    -.0061476    .0047704
         hti |   .0004249   .0005854     0.73   0.470    -.0007375    .0015872
        expc |    .000222   .0000288     7.72   0.000     .0001649    .0002792
      ggegr |   4.66e-13   1.07e-13     4.34   0.000     2.53e-13    6.79e-13
      gdpgr |  -.0029047   .0008978    -3.24   0.002    -.0046872   -.0011222
       _cons |   .6657895   .0388041    17.16   0.000     .5887432    .7428359
-------------+----------------------------------------------------------------
     sigma_u |  .04455609
     sigma_e |   .0243781
         rho |  .76961296   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(3, 94) = 12.22                     Prob > F = 0.0000
```

Source: Stata15 program outputs

Table 04: Results of the Estimation of the Random Effects Model (REM) for the Human Development Index (HDI)

```
Random-effects GLS regression                   Number of obs      =       104
Group variable: pays                            Number of groups   =         4

R-sq:                                           Obs per group:
     within  = 0.7301                                         min =        26
     between = 0.9650                                         avg =      26.0
     overall = 0.8631                                         max =        26

                                                Wald chi2(5)       =         .
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =         .

------------------------------------------------------------------------------
         hdi |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          ti |  -.0013315   .0001857    -7.17   0.000    -.0016954   -.0009675
         agr |  -.0095906   .0011492    -8.35   0.000    -.0118431   -.0073382
         hti |   .0017453   .0004158     4.20   0.000     .0009304    .0025603
        expc |   .0001849   .0000227     8.13   0.000     .0001403    .0002295
      ggegr |   3.59e-13   1.20e-13     3.01   0.003     1.25e-13    5.94e-13
      gdpgr |  -.0037716   .0010144    -3.72   0.000    -.0057597   -.0017834
       _cons |   .7554933   .0156444    48.29   0.000     .7248308    .7861558
-------------+----------------------------------------------------------------
     sigma_u |          0
     sigma_e |   .0243781
         rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Source: Stata15 program outputs

Table 05: Results of the Breusch and Pagan Test to Compare PRM and REM for the Human Development Index (HDI)

```
Breusch and Pagan Lagrangian multiplier test for random effects

        hdi[pays,t] = Xb + u[pays] + e[pays,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+-----------------------------
                     hdi |   .0055076        .0742131
                       e |   .0005943        .0243781
                       u |         0                0

        Test:   Var(u) = 0
                                  chibar2(01) =     0.00
                              Prob > chibar2 =   1.0000
```

Source: Stata15 program outputs