

Received: 15/10/2025

Accepted: 13/11/2025

Published: 30/11/2025

Welfare and Economic Development - A Study of the Relationship Using Statistical Modeling for the Period 2000-2024

الرفاهية و التنمية الاقتصادية - دراسة العلاقة باستعمال نمذجة

إحصائية للفترة 2000-2024

Laoufi Hakima¹, Benounissa Leila²

¹ Mustafa Stambouli University, Mascara(Algeria), h.laoufi@univ-mascara.dz

² Mustafa Stambouli University, Mascara(Algeria),
l.benounissa @univ-mascara.dz

Abstract:

This study aimed to demonstrate the impact of social welfare on economic development in Algeria for the period from 2000 to 2024. In light of this, we applied this study to the practical side using a standard study based on the linear regression equation model using the least squares method. We then adopted a descriptive approach, utilizing data and information available from several sources to analyze the developments in these indicators, based on previous studies and empirical studies related to the topic.

One of the most important findings is the confirmation of a significant contribution of the determinants of economic and social development to the quality of life of individuals. This means that there is a strong correlation between these factors and welfare, and that the variables controlling welfare primarily

include income levels, employment, education, health, and possibly social services. These are the factors that were adopted in the economic and social explanatory variables.

Keywords: Well-being, Health, Economic structure, Economic growth, economic development, Social services

JEL Classification : D31 , D63 , I31, I10, I19, O11, O15

المخلص:

هدفت هذه الدراسة إلى إبراز تأثير الرفاهية الاجتماعية على التنمية الاقتصادية في الجزائر للفترة الممتدة من سنة 2000 الى 2024 ، وفي ظل ذلك قمنا بإسقاط هذه الدراسة على الجانب التطبيقي باستخدام دراسة قياسية تعتمد على نموذج معادلة الانحدار الخطي بطريقة المربعات الصغرى، و من ثم الإعتماد على المنهج الوصفي باستخدام البيانات والمعلومات المتاحة من عدة مصادر لتحليل تطورات هذه المؤشرات و استنادا الى الدراسات السابقة و الدراسات التجريبية التي تخص الموضوع.

و من اهم النتائج التي تم التوصل اليها هو التأكيد على وجود مساهمة معتبرة لمحددات التنمية الاقتصادية والاجتماعية في جودة حياة الأفراد؛ أي أن هناك ارتباطاً قوياً بين تلك العوامل والرفاهية و ان المتغيرات التي تتحكم في الرفاهية تشمل بالأساس مستوى الدخل، التوظيف، التعليم، الصحة، وربما الخدمات الاجتماعية؛ و هي العوامل التي تم اعتمادها في المتغيرات التفسيرية الاقتصادية و الاجتماعية. **الكلمات المفتاحية:** الرفاه، الصحة، الهيكل الاقتصادي، النمو الاقتصادي، التنمية الاقتصادية، الخدمات الاجتماعية

Laoufi Hakima: h.laoufi@univ-mascara.dz

1.INTRODUCTION

Social and economic well-being is one of the fundamental goals pursued by modern societies, often linked to the level of economic development experienced by countries. With the development of economic theories and the multiplicity of measurement indicators, economic growth alone is no longer sufficient to determine a country's progress. Focus has also shifted to quality of life, income distribution, social justice, and sustainability. While some countries achieve high growth rates, this may not be directly reflected in the level of well-being experienced by citizens.

Academic and political interest in achieving well-being as the ultimate goal of economic policy has grown, particularly in light of the clear disparity between economic growth rates and quality of life levels in many countries, which raises questions about the actual relationship between these concepts.

Although many countries have achieved high rates of economic growth (Stiglitz, J. E., Sen, A., & Fitoussi, J.-P. (2009)), this has not always been reflected in improved indicators of social welfare and human development, raising fundamental questions about the nature of the relationship between these concepts. Is economic growth sufficient to achieve development and well-being, or are there intervening factors that play a more influential role in achieving social and economic goals?

The relationship between economic development and well-being is complex, intertwined with economic, social, and political factors. Therefore, the fundamental question remains: can economic development always lead to improved levels of well-being, and are traditional economic indicators sufficient to measure the quality of life of individuals? This is evident in the following research problem:

To what extent does economic development contribute to achieving social well-being for individuals? What are the factors that control the nature of this relationship?

To attempt to answer the general problem, some hypotheses were adopted in the research, which are:

- The higher the level of economic development, the higher the level of social well-being in society.

- Economic development does not necessarily lead to well-being unless it is accompanied by equitable income and service distribution policies.

2. Literature review

Many studies have examined the relationship between economic growth and well-being, with some focusing on the extent to which improvements in GDP reflect social well-being indicators. For example, the United Nations Human Development Report (UNDP) indicated that economic growth does not necessarily lead to improved well-being if it is not accompanied by equitable income distribution and enhanced social services. Easterlin (1974) also discussed the "Easterlin Paradox," which suggests that there is a disconnect between rising income and increased long-term happiness.

At the level of economic development, the literature has focused on the fact that development is not limited to quantitative growth but also includes structural transformations, including health, education, governance, and infrastructure. Studies such as those by Amartya Sen have shown that enhancing individual capabilities is a fundamental pillar in achieving development and well-being. Wesselbaum, D., Smith, M. D., Barrett, C. B., & Aiyar, A. (2023).

Some empirical studies have relied on international data to measure the relationship between economic growth and well-being indicators, such as life expectancy, education levels, and the happiness index. Margolis, S., Schwizgebel, E., Ozer, D. J., & Lzubomirsky, S. (2021). The experiences of some countries have shown that high growth does not necessarily lead to

significant improvements in well-being indicators, as is the case in some East Asian countries, where GDP increased while quality of life indicators remained largely unchanged.

In contrast, the experiences of Scandinavian countries indicate that adopting economic policies based on social justice and income distribution can achieve a balance between growth and well-being. - Helliwell, J. (2021). These findings support the hypothesis that distributive economic policies play a crucial role in linking growth to well-being.

- In a study by Michael D. Smith & Dennis Wesselbaum (2023), "Well-being and income across time and space: Evidence from one million households," this study uses data from the Gallup World Poll from 158 countries during the period 2009-2017 and shows how income is positively related to well-being, with significant variations across countries and regions. Permanyer, I., Seth, S., and Yalonetzky, G. (2018)

Showing how income is positively related to well-being, with large variations across countries and regions, they use empirical approaches to analyze data at the individual and country levels, focusing on inequalities in well-being and income so that averages do not obscure differences. Oishi, S., & Kesebir, S. (2015).

This study offers a comprehensive overview of global trends and key drivers related to well-being and income. It contributes to the existing literature by examining inequality in both dimensions, highlighting how average measures can mask significant disparities in people's lives. Utilizing data from the Gallup World Poll spanning nine years (2009–2017) and covering 158 countries (N=1,437,897), the analysis is conducted in two stages.

First, they present panel data at the country level. Second, they employ microeconomic regressions to identify

individual-level determinants of well-being and income. They find no support for the Easterlin paradox once income inequality is accounted for, and we demonstrate that income growth contributes to a reduction in well-being inequality. Moreover, the factors influencing both the mean and the inequality of well-being and income are largely similar. However, policymakers are urged to consider the full distributional effects of economic and social investments.

Zhang, P. (2022)

In another context, by researchers Jose Marquez¹ & Ferran Casas & Laura Taylor & Jan Emmanuel De Neve 2024 on economic development and adolescent well-being in 139 countries. There is a positive relationship between economic development and overall life satisfaction (OLS) among adults, though the benefits tend to diminish at higher levels of development

Using data from the 2015–2019 Gallup World Poll, we analyzed responses from 36,907 adolescents aged 15–17 across 139 countries. Linear regression was employed to explore the relationship between national economic development (measured by log per-capita GDP) and three wellbeing indicators: overall life satisfaction (OLS), positive emotions (PE), and negative emotions (NE). The analysis also considered variations by gender and compared adolescent patterns with those observed in adults.

Findings indicate a positive association between log per-capita GDP and both OLS and PE. However, this relationship weakens in high-income countries, particularly for PE overall and for OLS among females. For NE, a negative association is observed in lower-income countries, while a positive association emerges in wealthier nations. **Deaton, A., & Stone, A. (2013).**

Among adolescents aged 15–17, the link between economic development and life satisfaction is stronger in lower-income countries, whereas in adults, this pattern is reversed—stronger

associations are seen in higher-income contexts. These results suggest a complex and dynamic relationship between economic development and adolescent wellbeing, influenced by the specific wellbeing measure, level of national income, age, and gender. Our findings underscore the urgent need to expand and improve data collection on child and adolescent wellbeing—especially in low-income countries—in order to better understand and support global wellbeing. **Blau, F. D., & Kahn, L. (2017)**

A study by **Yujie Cui, 2024** Gordon Liu, and Yao Yao examines how population health affects economic growth, taking into account changes in economic structure (e.g., the proportion of employment in industry or services). It shows that the impact of health is not uniform, but varies across development stages. While the relationship between population health and economic growth has been widely explored, the extent of health's influence remains uncertain. A possible explanation for this ambiguity lies in the varying effects of health on economic growth at different stages of economic development. This study aims to investigate the long-term and marginal effects of health on economic growth, with a particular focus on shifts in economic structure. **Stevenson, B., & Wolfers, J. (2008).**

Methods; Building on the Cobb–Douglas production function, this research develops an empirical model that incorporates economic structure to assess the impact of health on economic growth. To address potential endogeneity issues, instrumental variable techniques are applied. The analysis is based on country-level panel data spanning from 1980 to 2015, sourced from the World Bank, the Penn World Tables, and the World Health Organization.

The findings indicate a positive long-term relationship between health and economic growth, especially in countries that have undergone demographic transitions. The marginal effect of health on growth varies depending on a country's economic structure. Notably, the economic benefits of improved health are

more significant in nations with a larger primary sector. As countries advance economically, the marginal impact of health tends to diminish. Additionally, changes in health influence labor force allocation across sectors in diverse ways. The results suggest that developing countries, particularly those that have completed the demographic transition, benefit more from health investments than their developed counterparts. This study contributes new insights into the heterogeneous effects of health on economic growth and underscores the critical role of economic structure in shaping these outcomes.

- The most important points extracted from the studies:

1. The relationship between economic growth and well-being is not always linear. That is, after a certain point in economic development, the benefits to well-being tend to diminish or even cease temporarily unless social policies are improved.

2. Health, education, and social infrastructure are essential as means of achieving true well-being.

Even with good economic growth, if investments in health, education, and infrastructure (including facilities and services) are not made, citizens' well-being may remain below desired levels. Studies such as Health Growth and EU Regions Well-being Infrastructure show that the well-being of citizens may remain below desired levels.

3. Absolute vs. Relative Poverty: In China, for example, economic growth has addressed absolute poverty but increased inequality; this means that undistributed growth leads to problems of equity and relative well-being.

4. The Importance of Alternative or Complementary Indicators to GDP: Several studies indicate that indicators such as quality of life, happiness, health, education, and equality of opportunity should be used alongside GDP to measure development and well-being.

3. Model and Study Variables

In this section, we will study the relationship between welfare indicators and economic development using the linear regression equation using the least squares method.

The adopted statistical method: Regression analysis is one of the most widely used tools in econometric analysis. Regression analysis is concerned with describing and evaluating the relationship between a variable (usually called the dependent variable) and one or more other variables (usually called the explanatory variables or independent variables). The explanatory variable is symbolized by y , and the explanatory variables are symbolized by x_3, x_2, x_1 , etc.

3.1. Least Squares Method

The ordinary least squares method relies on obtaining regression estimators, where α represents the intercept parameter and β represents the slope parameter. This minimizes the sum of squares of the residuals to their lowest value. A component called the sum of squares of the residuals is defined, and then α, β , is obtained, minimizing this component to its lowest value.

The least squares method gives us the regression estimates α, β , but it does not give us the variance estimate, and this is considered one of the weaknesses of the least squares method.

The special criterion for ordinary least squares: The estimated model is as follows:

u is the residual, which is equal to the model. The regression model can be run through the spread of the data for X and Y . The estimated line here is the one that gives the estimated Y .

3.2. Study variables:

To determine the impact of social policy on the level of well-being in Algeria, we adopted a set of indicators for the period 2000-2024, summarized in the following table.

Table 1: Study variables

Indicators	Coding	Source
GDP per capita	PGDP	World Bank
wage block	MASSLARIAL	National Office of Statistics
Support allocated to the health sector	SANTE	Ministry of Finance
Housing sector support	HABITAT	Ministry of Finance
unemployment rate	CHOMAGE	World Bank
Spending on the education sector	EDUCATION	World Bank

Source: Prepared by the researchers

After collecting and processing the data using econometrics software, we first present a summary of the descriptive statistics for the study variables, followed by the regression results.

Table 2: Descriptive statistics for study variables

	PGDP	MASSLARIA L	SANTE	EDUCATI ON	HABITA T	CHOMAG E
Mean	416368.5	3202.000	203.7781	16.98571	270.9941	14.42857
Median	418686.0	2907.500	199.2750	16.50000	255.1920	11.20000
Maximum	458873.0	5785.900	367.8230	21.90000	754.1450	29.80000

Minimum	339135.0	884.6000	33.23600	11.40000	69.81200	9.800000
Std. Dev.	35822.05	1863.086	131.4676	2.450160	173.2036	6.462131
Skewness	-0.858824	0.096884	-0.085063	-0.181947	0.903980	1.382553
Kurtosis	2.773353	1.347677	1.258519	2.877602	3.845319	3.355385
Jarque-Bera	2.626475	2.421752	2.678985	0.128975	3.485376	6.800600
Probability	0.268948	0.297936	0.261979	0.937548	0.175049	0.33363

Source: Prepared by researchers based on the outputs of the Eviews 10 program.

Looking at the table above, which summarizes the mean, largest, and smallest values for each variable, along with their standard deviations (Std. Dev.), the skewness coefficient is non-zero and has a negative value for the PGDP SANTE EDUCATION index, while the coefficient is positive for the remaining variables. The kurtosis coefficient is close to the value 3, which characterizes the normal distribution for all variables except HABITAT, indicating that the distribution in these series generally does not contain outliers. Furthermore, the Jarque Berra statistic values achieved a probability greater than the 0.05 significance level for all variables, which leads us to accept the hypothesis of a normal distribution for the variables.

Table 3: Correlation Coefficients

	PGDP	MASSSLARI A	SANT	EDUCATI O	HABIT A	CHOMA G
PGDP	1,00	0,84	0,83	-0,45	0,69	-0,93
MASSSLARIA	0,84	1,00	0,95	-0,41	0,72	-0,71
SANTE	0,83	0,95	1,00	-0,35	0,86	-0,74
EDUCATION	-0,45	-0,41	-0,35	1,00	-0,14	0,45

HABITAT	0,69	0,72	0,86	-0,14	1,00	-0,67
CHOMAGE	-0,93	-0,71	-0,74	0,45	-0,67	1,00

Source: Prepared by researchers based on the outputs of the Eviews 10 program.

Referring to the table that specifies the correlation coefficients and reading the lines, we first note:

- Regarding per capita GDP: a positive correlation with the wage bill index, health and housing support, but a negative correlation with the percentage of spending on education and unemployment. The higher the wage bill, the lower the per capita GDP.
- The correlation coefficients were similar in sign, showing a direct relationship with per capita GDP, health and housing support, and an inverse relationship with the percentage of spending on education and unemployment.

According to the approved welfare indicators and the correlation coefficients, individual welfare increases with support for the health and housing sectors through the provision of essential facilities that ensure the safety and security of citizens. However, the state's extravagance in government spending on education reduces individual welfare. This may be in the short term, as the role of education spending can be highlighted in the long term. Regarding high unemployment rates, it reduces individual welfare through the presence of idle human resources and non-existent income.

Table 4: Stationarity Test

		Augmented Dickey-Fuller test statistic		Phillips-Perron test statistic	
PDGDP	At level	-3.033	0.0481	-2.9918	0.0501

	1 first differ	-3.138	0.0397	-3.1019	0.0427
Massesalrial	At level	-3.107	0.0355	-3.0442	0.0382
	1 first differ	-2.5595	0.1111	-2.5142	0.1278
chomage	At level	-3.327	0.0276	-3.827	0.0094
	1 first differ	-2.619	0.1096	-3.259	0.0312
habitat	At level	-3.463	0.0501	-4.934	0.0311
	1 first differ	-5.361	0.0000	-8.1661	0.0000
sante	At level	-3.0727	0.0176	-3.843	0.0466
	1 first differ	-5.36	0.0004	-8.1661	0.0000
Education	At level	-3.101	0.0424	-3.0614	0.0455
	1 first differ	-5.7592	0.0002	-10.9605	0.0000

Source: Prepared by researchers based on the outputs of the EvIEWS 10 program

By extrapolating the results of the table above, we notice that most of the variables are stable at the level where the calculated test value is greater than the table values, and the probability is less than 0.05, and thus there is no unit root and the time series are stationary according to the Dickey-Fuller and Philip Perron tests.

Table 5: Analysis of the impact of social policies on per capita GDP

Dependent Variable: PGDP
Method: Least Squares
Date: 15/08/25 Time: 20:13
Sample: 2000 2024

Included observations: 24				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	457934.3	21619.41	21.18163	0.0000
SANTE	116.6113	41.71652	2.795326	0.0124
EDUCATION	121.5170	1215.862	0.099943	0.9216
HABITAT	-35.41678	29.82146	-1.187628	0.2513
CHOMAGE	-4042.872	603.2472	-6.701849	0.0000
R-squared	0.920326	Mean dependent var		416811.8
Adjusted R-squared	0.901579	S.D. dependent var		35020.52
S.E. of regression	10986.68	Akaike info criterion		21.64347
Sum squared resid	2.05E+09	Schwarz criterion		21.89143
Log likelihood	-233.0782	Hannan-Quinn criter.		21.70188
F-statistic	52.07231	Durbin-Watson stat		1.105582
Prob(F-statistic)	0.000000			

Source: Prepared by researchers based on the outputs of the Eviews 10 program

From the table above, we note the results of testing the first model, in which the dependent variable was the primary indicator of well-being (per capita GDP), Using the Fisher's F test, the model was significant, with a significant Fisher's value of 52.07, where the calculated Ftab is greater than the tabular value ($F_{tab} < F_{ca}$), and the probability is less than the 5% significance level.

The coefficients column, which determines the effect of the independent variables on the dependent variable, indicates an effect if the probability (Prob) is less than 0.05. Otherwise, the variable has no effect on the dependent variable. The probability was less than 5% for both the health support and unemployment variables. The remaining variables had no statistical effect. The sign of the coefficient determines the type of effect. For the health variable, the coefficient is large and positive, indicating a strong direct relationship, while the unemployment coefficient is

large and negative, meaning it has a strong negative effect on per capita GDP.

Overall, the independent variables of social well-being were able to explain 92% of the variation in per capita GDP, according to the R-squared test.

Table 6: Analysis of the impact of the welfare index on the wage bill

Dependent Variable: MASSSLARIAL_ONS				
Method: Least Squares				
Date: 15/08/28 Time: 20:13				
Sample (adjusted): 2000 2024				
Included observations: 24 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	963.6020	974.3268	0.988993	0.3374
SANTE	17.37210	1.896178	9.161640	0.0000
EDUCATION	-11.28289	54.72592	-0.206171	0.8393
HABITAT	-3.715749	1.341869	-2.769085	0.0137
CHOMAGE	-7.142912	27.31102	-0.261540	0.7970
R-squared	0.943680	Mean dependent var		3202.000
Adjusted R-squared	0.929599	S.D. dependent var		1863.086
S.E. of regression	494.3344	Akaike info criterion		15.44856
Sum squared resid	3909864.	Schwarz criterion		15.69725
Log likelihood	-157.2099	Hannan-Quinn criter.		15.50253
F-statistic	67.02220	Durbin-Watson stat		1.272428
Prob(F-statistic)	0.000000			

Source: Prepared by researchers based on the outputs of the Eviews 10 program

We note from the table above the results of testing the second model, in which the dependent variable was the primary indicator of well-being (wage mass).

Using Fisher's F test, the model was significant, with Fisher's value (67.02) being significant, as the calculated Ftab was greater than the tabular value ($F_{tab} < F_{ca}$), and the probability was less than the 5% significance level.

The coefficients column, which determines the effect of the independent variables on the dependent variable, indicates an effect if the probability (Prob) is less than 0.05. Otherwise, the variable has no effect on the dependent variable. The probability was less than 5% for both the health and housing support variables. The remaining variables had no statistical effect. The sign of the coefficient determines the type of effect. For the health variable, the coefficient is positive, indicating a direct relationship, while for the housing support, the coefficient is negative, meaning it has a negative effect on the wage bill.

Overall, the independent variables of social policies were able to explain 94% of the variation in the wage bill according to the R-squared test.

To verify the validity of the models, we resort to testing the residuals, which must follow a normal distribution and be free of heteroscedasticity through a series of tests whose probability must be greater than 0.05.

Table 7: Homogeneity of Residuals Test for the Two Models

Breusch-Godfrey Serial Correlation LM Test:							
First model				Second model			
F-statistic	1.8577	Prob.	0.1902	F-statistic	1.2016	Prob.	0.32929
Obs*R-squared	4.3674	Prob. – chi	0.1126	Obs*R-squared	3.0768	Prob. Chi-	0.21
Heteroskedasticity Test: Breusch-Pagan-Godfrey							
F-statistic	1.125	Prob.	0.3774	F-statistic	2.018	Prob.	0.14
Obs*R-sqr	4.606	Prob.	0.3302	Obs*R-sqr	7.043	Prob.	0.13
Scald	1.79	Prob.	0.7739	Scald	4.371	Prob	0.36

expld	24			expld			
-------	----	--	--	-------	--	--	--

Source: Prepared by researchers based on the outputs of the Eviews 10 program

It is clear from the table above that the two models are free from the problem of heteroscedasticity of residuals, as the probability of all tests was greater than 0.05.

4. CONCLUSION

The relationship between well-being and economic development is interactive and bidirectional. Economic development contributes to improved well-being levels through increased income, improved health and education services, and expanded employment opportunities. In turn, higher well-being leads to enhanced social productivity and stability, paving the way for sustainable economic growth.

With the evolution of economic and social concepts, development is no longer measured solely by gross domestic product (GDP), but rather includes broader indicators such as quality of life, income distribution, individual freedoms, social justice, and life satisfaction. This highlights the importance of well-being as a fundamental pillar for achieving comprehensive and humane economic development.

Through the quantitative study conducted on the relationship between well-being and economic development, we reached some key conclusions, namely:

1. Economic development is a necessary condition for improving well-being, but it is not sufficient on its own. It must be accompanied by equitable distribution policies and attention to health, education, and social protection.

2. Higher levels of well-being enhance productivity and stimulate innovation, which positively impacts economic growth rates.
3. Inequality in the distribution of the fruits of development weakens the impact of economic development on well-being, requiring government interventions to restore balance.
4. The experiences of various countries demonstrate that focusing on human well-being, rather than just economic indicators, leads to more sustainable and inclusive development.
5. Investing in human capital (education, health, social security) is the effective bridge between economic growth and achieving sustainable well-being.
6. The study sought to identify and define the nature of the relationship between social policies and individual well-being in Algeria by analyzing a set of indicators and measuring their impact. We concluded that increasing support for the health sector improves societal well-being, as does reducing unemployment through employment policies. However, housing and education policies did not achieve the desired impact on societal well-being..

Recommendations

- Emphasize that development policies must take into account not only purely economic measures (GDP, investment, etc.), but also the social dimensions that affect quality of life.
- The importance of improving social services, health, education, and social welfare as tools for raising well-being.
- It is suggested that vulnerable groups be empowered and policies that reduce social inequality be developed to achieve comprehensive well-being.

5. Bibliography List :

(1) Helliwell, J. (2021). Measuring and Using Happiness to Support Public Policies. In M. T. Lee, L. D. Kubzansky, & T. J. Van der Weele (Eds.), *Measuring Well-Being: Interdisciplinary Perspectives from the Social Sciences and the Humanities*. New York City: Oxford Univ. Press.

(2) Margolis, S., Schwizgebel, E., Ozer, D. J., & Lzubomirsky, S. (2021). Empirical Relationships Among Five Types of Well-Being. In M. T. Lee, L. D. Kubzansky, & T. J. VanderWeele (Eds.), *Measuring Well-Being: Interdisciplinary Perspectives from the Social Sciences and the Humanities*. New York City: Oxford Univ. Press.

(3) Oishi, S., & Kesebir, S. (2015). Income inequality explains why economic growth does not always translate to an increase in happiness. *Psychological Science*, 26(10), 1630–1638.

(4) Permanyer, I., Seth, S., and Yalonetzky, G. (2018). Inequality measurement for bounded variables. 14th Mtg Society for Social Choice and Welfare, Seoul, Korea

(5) Stiglitz, J. E., Sen, A., & Fitoussi, J.-P. (2009). Report by the commission on the measurement of economic performance and social progress.

(6) Wesselbaum, D., Smith, M. D., Barrett, C. B., & Aiyar, A. (2023). A food insecurity Kuznets curve? *World Development*, 65, 106189.

(7) Alesina, A., Di Tella, R., & MacCulloch, R. (2004). Inequality and happiness: Are Europeans and Americans different? *Journal of Public Economics*, 88(9–10), 2009–2042

(8) Austin, A. (2016). On well-being and public policy: Are we capable of questioning the hegemony of happiness? *Social Indicators Research*, 127, 123–138

(9) Blau, F. D., & Kahn, L. (2017). The gender wage gap: Extent, trends, and explanations. *Journal of Economic Literature*, 55(3), 789–865.

(10) Deaton, A. (2008). Income, health, and well-being around the world: Evidence from the Gallup world poll. *Journal of Economic Perspectives*, 22(2), 53–72.

(11) Deaton, A., & Stone, A. (2013). Economic analysis of subjective well-being. *American Economic Review: Papers & Proceedings*, 103(3), 591–597.

(12) Zhang, P. (2022). Happiness inequality has a Kuznets-style relation with economic growth in China. *Scientific Reports*, 12(1), 1–9.

(13) World Bank (n.d.). World Bank Country and Lending Groups. In Country classification. The World Bank. Accessible at: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-worldbank-country-and-lending-groups>. Accessed 15 Mar 2024.

(14) Stevenson, B., & Wolfers, J. (2008). Economic growth and subjective well-being: Reassessing the Easterlin paradox (No. w14282). National Bureau of Economic Research.

(15) Michael D. Smith & Dennis Wesselbaum (2023), Well-Being and Income Across Space and Time: Evidence from One Million Households; *Journal of Happiness Studies* (2023) 24:1813–1840 <https://doi.org/10.1007/s10902-023-00660-4>

(16) Jose Marquez1 & Ferran Casas & Laura Taylor & Jan-Emmanuel De Neve 2024, Economic Development and Adolescent Wellbeing in 139 Countries, *Child Indicators Research* (2024) 17:1405–1442 <https://doi.org/10.1007/s12187-024-10131-8>

(17) Yujie Cui & Gordon Liu & Yao Yao ,2024, The impact of health on growth: from the perspective of economic structure evolution, Cui et al. *Health Economics Review* (2025) 15:57 <https://doi.org/10.1186/s13561-025-00636-5>.