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Factors That Determine GDP per Capita among Asian Countries

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Abstract
This exploratory study examined the impact of five variables, including the Financial Literacy Index, Global Peace Index, Happiness Score, Literacy Rate, and IQ, on the GDP per capita of fifty Asian countries using multiple regression analysis. Data from diverse sources, such as the World Bank Database, World Happiness Report, Global Financial Literacy Survey, Global Peace Index, Literacy Rates Index, and World Data Info, were meticulously analyzed. The findings underscored the significance of financial literacy and happiness as solid indicators of a country's GDP per capita. A robust positive correlation was observed between these variables and economic well-being, emphasizing the pivotal role of financial knowledge and well-being in a nation's prosperity. Conversely, the Global Peace Index, Literacy Rate, and Intelligence Quotient did not exhibit significant associations with GDP per capita, suggesting they have less direct influence in this context. This study recommends prioritizing financial literacy and well-being initiatives to empower individuals and foster happiness, positively impacting economic development. It also advocates for a comprehensive approach that considers various factors influencing GDP per capita and ongoing research into additional variables for a holistic understanding of economic determinants across Asian countries.
Keywords: *multiple regression, gdp per capita, financial literacy, happiness index*

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I. INTRODUCTION

The ability to make informed financial choices regarding saving, investing, borrowing, and more are those people who are financially literate (Importance of Financial Literacy, 2023). These are people who are equipped to make decisions related to financial management (Post, 2022). Financial literacy is essential when increasingly complex financial products are readily available to a wide range of the population (Others, 2022). This is where people decide on what products they want or need.

Financial literacy measures basic knowledge of interest rates, interest compounding, inflation, and risk diversification. According to (gflec.org), from a ratio of 1:3, one out of three are financially literate. Women with low incomes and lower-educated respondents are likely to suffer from financial knowledge gaps. It is also found that adults with bank accounts are generally more financially literate, regardless of income. Being poor and being rich is not a predictor of being financially literate. However, financial knowledge is commonly higher among the wealthy, well-educated, and those who use financial services. Higher financial knowledge can lead to broader financial inclusion, improved job planning, and retirement savings.

Financial literacy is one of the indicators that predict every country's Gross Domestic Product (GDP) per capita (VietNamNet News, n.d.). It measures the economic output that accounts for the number of individuals in a country. GDP per capita is computed by dividing the country's GDP by its total population (Elia et al., 2020). It is a universal measure of wealth and prosperity. In response to "No Poverty" of the United Nations (UN) Sustainable Development Goals (SDG) (Cadosales et al., 2020), eradication of poverty remains one of the most significant challenges facing humanity, which is caused by different factors such as climate change, conflict, food insecurity, and poor financial knowledge. To achieve this, SDGs should emphasize the importance of financial literacy in school programs.

China's largest GDP does not necessarily mean it is the wealthiest country, as its GDP per capita is lower. Population is an excellent indicator of knowing a country's GDP, not GDP per capita. Despite being the most populated country, only four out of ten Asian countries belong to the top ten wealthiest countries by GDP per capita, with Qatar, Singapore, Brunei, and Kuwait being the richest. On the other hand, there are no Asian countries that belong to the top ten poorest countries in the world by GDP per capita.

High educational attainment correlates to high financial literacy, particularly math and arithmetic skills. According to (worldpopulationreview.com) there is an association between a high literacy rate and a developed country where students who started school at a young age are those who live in a developed country. It is also observed by (un.org) that the foundation for creating sustainable development is obtaining a quality education (Cabanilla, 2023; Quinco et al., 2022; Elivera et al., 2022; Cadosales et al., 2021). Quality education is crucial for sustainable development, improving quality of life, and equipping individuals with tools to address global problems like poverty and poor education.

Peace is not commonly used as an indicator in predicting the GDP per capita in a country because it is difficult to measure. However, according to the Global Peace Index (GPI) (visionofhumanity.org), peacefulness is measured across three domains: Safety and security, ongoing conflict, and militarization. The GPI is designed to help determine how peaceful a country is. High levels of peace are associated with higher living satisfaction, freedom, and respect, suggesting a correlation between GPI and GDP per capita in a country.

The World Happiness Report of 2019 identifies six variables that contribute to happiness: GDP per capita, social support, healthy life expectancy, freedom, generosity, and absence of corruption (Gaur, 2023). These variables are based on individual assessments of each country, with GDP per capita measured in terms of purchasing power parity (World Happiness, 2023). Healthy life expectancy is based on the World Health Organization (WHO) Global Health Observatory data repository (Onagbiye et al., 2023). Social support, freedom, generosity, and perceptions of corruption are the variables that constitute the GDP per capita of a country (Khanna, 2021). The happiness index indicates an individual's happiness level by answering several questions.

Intelligence quotient, or IQ as it is frequently called, is a measure of human intelligence (Countries by IQ, 2023). These scores typically reflect the quality of education among countries (Cabanilla, 2023). However, as defined by Howard Gardner's multiple intelligences theory, IQ is not the only measure of intelligence. There is an association between an individual's IQ and his or her GDP per capita. In this paper, the researcher ought to find where there is a correlation between a country's IQ and its GDP per capita.

The sustainable development goals are the blueprint to achieve a better and more sustainable future for all (Bhattacharya & Bose, 2023). It addresses the global challenges such as poverty. GDP per capita categorizes the wealth of a being, whether poor or rich, which is why one of the seventeen (17) goals is to eradicate poverty in all forms to be achieved by 2030. Despite job opportunities, 10% of the world's population still lives in extreme poverty and struggles to fulfill basic needs such as health, education, and access to water and sanitation (Humanitarian Aid Worker Career Guide, 2021). High financial literacy could help eradicate poverty, for it will develop an individual’s thinking in financial matters to help them (Payusan et al., 2022)

In the Philippine setting, Filipinos lack the specific knowledge to make informed financial decisions (BusinessWorld, 2019). The country has also been plagued with fraudulent and unethical online lending behavior. Even the most responsible Filipinos are at risk when attempting to access the credit needed to rise above poverty, as most Filipinos will take on debt. Improving social protection programs, including the 4Ps, will support the incomes of poor households and help build their resilience against adverse shocks (Vera, 2019).

People who lack knowledge in using services through banking might face financial disasters such as high debt or bankruptcy. Financial ignorance carries significant costs. Individuals who fail to understand the basic concept of financial knowledge may borrow more and save less money, which could be a downside to a country’s GDP per capita. Global peace, happiness, intelligence quotient, and literacy rate can influence GDP per capita. However, researchers struggle to determine which variables affect a country's wealth, as GDP per capita indicates a country's economic status.

Research Questions

1. The main objective of the study is to establish the socio-economic characteristics of a country that influence the increase of GDP per capita, specifically:

a. Which of the five identified variables or predictors of a country has a significant relationship with GDP per capita?

b. How can these variables be used to increase the GDP per capita of Asian countries?

2. What theory or model can be generated after the exploration of the variables in determining the GDP per capita of Asian Countries?

Hypothesis of The Study

The study looks into the relationship of the variables namely the financial literacy index, global peace index, literacy rate, happiness index, and IQ to the GDP per capita of Asian countries. The hypotheses statements of the study are as follows:

$H_0$1: There is no significant relationship between the GDP per capita and the Financial literacy rate of Asian countries.

$H_0$2: There is no significant relationship between the GDP per capita and the global peace index of Asian Countries.
$H_0$3: There is no significant relationship between the GDP per capita and the literacy rate of Asian Countries.
$H_0$4: There is no significant relationship between the GDP per capita and the happiness index of Asian Countries.
$H_0$5: There is no significant relationship between the GDP per capita and the IQ of Asian Countries.

II. METHODOLOGY

The study utilized an exploratory research design to determine whether the five (5) variables, namely Financial literacy rate, Global Peace Index, Financial Literacy rate, Happiness score, and IQ, affect the GDP per capita of a country. Fifty (50) countries in Asia were purposely chosen as data for the study, and the variables or factors were generated from the World Bank Database, World Happiness Report of 2018, Global Financial Literacy Survey, Global Peace Index, Literacy Rates Index, and World Data Info. The data were generated from the online database of the World Bank Group, World Happiness Report, Financial Literacy Index, Global Peace Index, Literacy Rates Index, and World Data Info. The procedure employed data mining. Data mining is a procedure in which possible helpful information is obtained from available data sets (Nature.com). The available data was regressed through multiple regression. A decision on the data to be included will be adopted once the collection and selection process is finished. The researcher proceeds to the analysis of the data using statistical treatments.

Brown (2014) identified a 5-step process as an approach to data mining. The first step is to identify the information's source. Next, points that need analysis are selected from the source information. The third step in the procedure involves extracting salient information from the data. Next, fundamental values were further culled from the previously identified data set. The fifth step is the reporting and interpretation of the outcomes. The study utilized multiple regression analysis to examine the identified variables' correlation. First, regression analysis was utilized for the validity of the hypothesized model. Regression analysis is a method in which it attempts to model a relationship between two or more explanatory variables and a response variable by fitting a linear equation to observed data (Predicting the purachase done on black Friday, n.d.). The Global peace index, financial literacy index, literacy index, happiness index, and IQ of the Asian countries are the identified variables to show their correlation with the GDP per capita of Asian countries after being measured utilizing statistical treatment.

III. RESULTS AND DISCUSSION

The results of the data gathered from the 50 Asian countries are presented using a Minitab (free version). The statistical treatment used is multiple regression analysis.

Predictor	Coef	SE Coef	T	P
Constant	-38087	29702	-1.28	0.206
Financial Literacy	427.1	191.2	2.23	0.031
Global Peace Index	-47	3919	-0.01	0.991
Literacy Rate	-10.8	158.3	-0.07	0.946
Happiness Score	6663	3006	2.22	0.032
IQ	38.7	273.1	0.14	0.888

S = 13075 R-Sq = 34.3% R-sq(adj) = 26.8%

Regression equation:
GDP Per Capita=-38087 +427 (Financial Literacy) + 6663 (Happiness Score)

Using GDP per capita as the independent factor, it is being regressed with the five dependent factors: Financial Literacy Index, Global Peace Index, Literacy Rate, Happiness Index, and intelligence quotient. The correlation model is more effective than the regression model in determining the GDP per capita of an Asian country.

The Financial Literacy Index is a good indicator in determining the GDP per capita of a country. This means a significant relationship exists between the Financial Literacy Index and the GDP per capita of a country. It implies that the higher the person's financial literacy, the higher its GDP per capita. It is also implied that people who are good with basic banking procedures have higher knowledge in dealing with financial matters. The Happiness Index is a good indicator in determining the GDP per capita of a country. This means a significant relationship exists between the Happiness Index and the GDP per capita of a country. This implies that the happier the person is, the higher its GDP per capita. It is also implied that individuals with good support, such as their family and friends, could determine the GDP per capita of a country. It is also implied that satisfaction with the freedom received is a good indicator of GDP per capita. It is also implied that generosity is a good indicator, the same with countries with no corruption.

The Global Peace Index is not a good way to determine a country's GDP per person. This means that the Global Peace Index and a country's GDP per capita do not have a strong link. The rate at which a person can read and write is not an excellent way to determine a country's GDP per head. In other words, there is no strong link between a country's literacy rate and GDP per person (Babatunde, 2011). A person's Intelligence Quotient is not a good way to figure out a country's GDP per head. In other words, there is no strong link between a country's IQ and GDP per head.

IV. CONCLUSION AND RECOMMENDATION

A regression model was used to examine the link between GDP per capita and five critical factors in Asian countries: The Happiness Index, the Financial Literacy Index, the Global Peace Index, and the Literacy Rate. The findings show that the Financial Literacy and Happiness Index predicts a country's GDP per capita. They also strongly link financial literacy, happiness, and economic well-being. The results of this study show how crucial financial knowledge and social well-being are to a country's success. However, the Global Peace Index, the Literacy Rate, and the Intelligence Quotient are not significantly linked to GDP per head. This means that they may not have as much of an effect on economic results in this case. Ultimately, policies and programs that aim to teach people about money and make people happier could affect economic growth across countries. At the same time, other things should be looked at in a bigger picture to understand what affects GDP per capita entirely. Prioritize financial literacy programs to give people the tools they need to make smart financial decisions; invest in well-being programs to improve people's overall happiness and social support; take a broad view by looking at the many factors that affect GDP per capita; keep researching other possible variables; and change strategies to fit the needs of each country.

REFERENCES

[1]. Babatunde, A. F. (2011). Financial development, foreign direct investment and economic growth: challenges for developing countries (Doctoral dissertation, University of Hull).
[2]. Bhattacharya, R., & Bose, D. (2023). A review of the sustainable development goals to make headways through the COVID-19 pandemic era. Environmental Progress & Sustainable Energy, e14093.
[3]. Cabanilla Jr, A. (2023). Development and validation of students' satisfaction survey in flexible learning.
[4]. Cabanilla, A. B., & Pogoy, A. (2023). Teachers' Experiences in Flipped Classroom in South-East Asian Countries: A Meta-Synthesis. Jurnal Pendidikan Progresif, 13(2), 218-229.
[5]. Cadosales, M. N. Q., Cabanilla, A. B., Elcullada, R. O., Lacea, R. L., & Beltran, N. Y. (2021). A meta-synthesis on the potential effectiveness of a teaching internship program. Turkish Online Journal of Qualitative Inquiry (TOJQI), 12(6), 8955-8964.
[6]. Cadosales, M. N. Q., Angelito Jr, B. C., & Beltran, N. Y. (2020). Kakugi Ko, Kalambuan Mo (KKK Mo) as an Extension Program for Daycare Workers: An Impact Study. Recoletos Multidisciplinary Research Journal, 8(2), 107-119.
[7]. Countries by IQ - Average IQ by Country 2023. (n.d.). https://worldpopulationreview.com/country-rankings/average-iq-by-country
[8]. Elia, C., Karamanos, A., Dregan, A., O'Keeffe, M., Wolfe, I., Sandall, J., Morgan, C., Cruickshank, J., Gobin, R., Wilks, R., & Harding, S. (2020). Association of macro-level determinants with adolescent overweight and suicidal ideation with planning: A cross-sectional study of 21 Latin American and Caribbean Countries. PLOS Medicine, 17(12), e1003443. https://doi.org/10.1371/journal.pmed.1003443
[9]. Elivera, M. J. S., Barriga, C., Basalo, D. M. L., Contridas, J. M., Endrina, G. L., Cabanilla, A., & Cortes, V. M. (2022). Effects of Pandemic on Special Education Teachers Teaching Hearing Impaired (HI) Students. International Journal of Humanities and Education Development (IJHED), 4(3), 196-204.
[10]. Gaur, M. (2023). World Happiness Index 2023 Country Wise list. Adda247. https://currentaffairs.adda247.com/world-happiness-index-2023/
[11]. Humanitarian Aid Worker Career Guide. (2021, March 10). Maryville Online. https://online.maryville.edu/blog/humanitarian-aid-worker-career-guide/
[12]. Importance of Financial Literacy: [Essay Example], 1983 words. (2023, June 26). GradesFixer. https://gradesfixer.com/free-essay-examples/importance-of-financial-literacy/
[13]. Khanna, Manya (2021). Measuring Wellbeing. Retrieved 17 October 2021 from https://rstudio-pubs-static.s3.amazonaws.com/1004465_2521b98898074ae4a54a764df7b36822.html
[14]. Onagbiye, S. O., Asare, H., Bester, P., & Ricci, C. (2023). Sedentariness and overweight in relation to mortality in Sub-Saharan Africa. A Mediation analysis based on the WHO-Global Health Observatory Data Repository. Journal of Public Health in Africa. https://doi.org/10.4081/jphia.2023.2155
[15]. Others. (2022). Financial Literacy Around the World. . .Financial Literacy around the World (FLAT World) project, and numerous national survey initiatives that collect information on financial literacy. cupdf.com. https://cupdf.com/document/financial-literacy-around-the-world-financial-literacy-around-the-world-flat.html?page=1
[16]. Payusan, A., Arrofo, M. J., Codilla, L. A., Gaco, S., Dakay, D. K., & Cortes, V. (2022). Priorities and Intentions of Working-Students Working amidst COVID-19 Pandemic. The Normal Lights, 16(2).
[17]. Post, S. (2022, May 27). Children's day: Fairmoney launches free financial literacy for kids. Businessday NG. https://businessday.ng/sponsored/article/childrens-day-fairmoney-launches-free-financial-literacy-for-kids/

[18]. PREDICTING THE PURCHASE DONE ON BLACK FRIDAY. (n.d.). Overleaf, Online LaTeX-redigeringsprogram. https://no.overleaf.com/articles/predicting-the-purchase-done-on-black-friday/dzfgytptsgzk

[19]. Quinco, D. F., Cabanilla Jr, A. B., & Cadosales, M. N. Q. (2022). Meta-Synthesis On Faculty Development During The Covid-19 Pandemic. Journal of Positive School Psychology, 6(8), 981-991.in

[20]. VietNamNet News. (n.d.). Why foreign investors call Vietnam a rising Asian star? VietNamNet News. https://vietnamnet.vn/en/why-foreign-investors-call-vietnam-a-rising-asian-star-539175.html

[21]. World Happiness, Trust and Social Connections in Times of Crisis | The World Happiness Report. (2023, March 20). https://worldhappiness.report/ed/2023/world-happiness-trust-and-social-connections-in-times-of-crisis/