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Environmental Degradation and Subjective Well-Being: A Cross-Country Analysis

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Abstract **Original Research Article**

Worldwide researchers are examining the happiness of the citizens and its determining factors. The utilitarian thought of happiness states that happiness can be increased by maximizing the welfare of people. Again, the welfare of the people is related to the access to resources and the utilization of resources, which further leads to influence the ecological footprint. Thus, there is an interconnection between happiness and ecological footprint. The existing literature is unable to examine happiness and its determining factors across countries. Therefore, the present study aims to bridge this research gap by a theoretical as well as empirical investigation of a panel of 55 countries over two decades. We find that in most of the countries, the happiness index value as well as the ecological footprint increased during the study period. This indicates that there may be a relation between the rise in subjective well-being and environmental degradation across countries. We verified such a relationship by panel data analysis. Our analysis reveals an inverse and significant relationship between subjective well-being (measured by HPI) and environmental degradation (measured by ecological footprint). This means that the ecological footprint influences the HPI negatively and significantly. Thus, there is a need of global level policy action to monitor the ecological footprint to enhance happiness and well-being.

Keywords: Environmental Degradation, Subjective Well-being, Cross-Country, Panel Data.

1. INTRODUCTION

The growth of a nation is judged by several indicators. One of the indicators is the growth of the national product of a nation. Again, the growth of a nation influences the happiness and well-being of its citizens. The well-being of the citizens of the richer and wealthier nations is comparatively better than that of the non-wealthier countries. In the literature, there is a long debate about the relation between a country's growth of gross domestic product (GDP or GNP) and the well-being of the citizens. A study by Farid and Lazarus (2008) found that absolute income, relative income, freedom, and social capital are important determining factors of the well-being of the developing countries, and these factors create difference rich and poor countries. Another study by Lucas and Schimmack (2009) noted that although the correlation between income and well-being is small, it translates into a large mean difference between poor and rich countries. However, the growth of a country depends on the utilisation of national resources (Scully, 1989; Kropf, 2010), which ultimately increases the ecological footprint.

During the comparison of various countries, researchers use indicators like GDP, happiness index, and ecological footprint. The reason behind this is the worldwide acceptance of these indicators. The growth of GDP indicates the growth of money value of all final goods and services produced by the native and foreign factors within the territory of a country during a financial year. The comparison of country-wise GDP is well-accepted because it is a single and simple measure of the market-based economic activities (Stiglitz, 2009; Bromley, 1997). Again, the ecological footprint is a powerful indicator that shows the human demand on biological resources. Further, it shows the level of consumption of the available bio-productive resources (Wiedmann and Barrett, 2010; Kitzes *et al.,* 2009). In other words, the ecological footprint is a measure of how much area of biologically productive land and water an individual, population, or activity requires to produce all the resources it consumes and to absorb the waste it generates, using prevailing technology and resource management practices (Global Footprint Network).

However, studies like Kuznets (1934), Bannister & Mourmouras (2018), and Bergh (2009) stated that GDP is not a perfect measure of well-being as it considers only the value of goods and services bought and sold in the market. To understand social welfare, it is better to measure several factors such as happiness, health, leisure, inequality, pollution, etc. (Fleurbaey, 2009; Thomas and Evans, 2010; Aitken, 2020; Slesnick, 2020). In this regard, a couple of studies have made path-breaking contributions through their theoretical and empirical investigation in the domain of national income and well-being, particularly happiness (Ambramovitz, 1959, and Easterlin, 1974, 1995). Worldwide, there are few measurements of happiness. Happiness index is one of the measurements. The happiness index is measured by how close nations are to reaching high life expectancy and well-being within a fair consumption space. More importantly, it measures not just well-being, but sustainable well-being of the nation (Abdallah *et al.,* 2024).

Thus, it seems that there is a relation between happiness and the ecological footprint (Ferrer-i-Carbonell and Gowdy, 2007; Gowdy, 2005). It is difficult to assume a positive and direct relation between economic growth and social welfare (Daly, 1987), as socio-economic metabolism is responsible for environmental degradation. In this context, the existing literature is divided into two groups. The impact of environmental degradation on well-being can be either positive or negative (Mazur and Rosa 1974; Dietz and Jorgenson, 2015). Studies mentioned that rising pressure on the environment due to energy consumption does not necessarily indicate higher well-being (Mazur and Rosa, 1974, and Dietz et al, 2009). Contrastingly, Jorgenson and Dietz (2015) noted a direct linkage between economic growth and ecological intensity.

Apart from ecological footprints and GDP, there may be several factors which may influence happiness. In this regard, income inequality may have a significant relationship with happiness. Globally, a wide disparity in income inequality is observed. This is due to disparities in access to several resources across communities and regions. Studies revealed that citizens became happier with the reduction of income inequality (Oishi *et al.,* 2011). In contrast, stated that happiness is not necessarily higher for the richer section in comparison to the poorer section (Tavor *et al.,* 2017). Another study mentioned that the perception of happiness is more important and found that the narrowly defined inequality has a bigger influence on happiness (Knight & Gunatilaka, 2022).

Further, urbanization plays a role in determining the importance of overall happiness (Bernini *et al.*,, 2022). The study found that happiness decreases with the level of urbanization. In urban areas, family satisfaction contributes to overall happiness, while friendships, environment, and satisfaction with health carry more weight in rural areas. Again, a study by Nguena *et al.,* (2024) found that urbanization positively and significantly increases happiness in African countries.

However, the existing literature shows that there are very few studies that examine happiness and its determining factors across countries. More specifically, the literature is very scant that examines the relationship between happiness and ecological footprint across countries. Thus, the present study aims to bridge this research gap by conducting a detailed analysis of the interplay between happiness and ecological footprint.

The present study has two specific innovative sides. First, it constructs the theoretical background to show the linkage between happiness and ecological footprint. Second, it uses panel data from 53 countries over two decades for an empirical investigation of the relationship. Therefore, the findings of the study have the potential to contribute significantly to the literature of happiness, environment, and sustainability. Further, the findings of the theoretical and empirical research work may help the global policy makers to suggest a framework for sustainable development of both developing and developed countries.

The plan of the study is structured as follows. Section 2 underpins the theoretical background of the study. Section 3 describes the various data sources of the study. Section 4 presents the details of the methodology used for the empirical investigation. This section is followed by a detailed analysis of results, which is done in Section 5. Finally, the study concludes with actionable recommendations to advance the twin goals of happiness and a sustainable environment.

2. THEORETICAL BACKGROUND

Democritus visualised happiness as a ‘case of mind’ instead of ‘favorable fate’, which was previously thought. This was the first subjective view on happiness (Kesebir & Diener, 2008). Later, Socrates and his Student Plato presented happiness as a ‘secure enjoyment of what is good and beautiful’ (Plato, 1999). Aristotle put forward the ‘eudaimonia’ view of happiness. According to Aristotle, happiness turns out to be an activity of the soul in accordance with virtue. Further, he mentioned that happiness is not a short-term concept, but rather it is a long-term concept (Pursuit of Happiness, 2018). According to Aristotle, eudaimonia and hedonism are distinguishable and separable. Hedonism presents happiness as a matter of raw subjective feeling. Following the concept of hedonism, Bentham (1978) put forward the concept of utilitarianism. Utilitarianism aims for ‘the greatest happiness of the greatest number’ by maximizing the welfare of the people.

Contrastingly, the Nobel Laureate economist, AK Sen, was much more concerned about the ‘

individual freedom' instead of 'individual welfare' (Sen, 1991). In this context, Sen's '*Capability Approach'* is much discussed by scholars across the globe. The Capability Approach focuses upon the moral significance of individuals' capability of achieving the kind of lives they have reason to value. In other words, this approach focuses on the 'access to the means to live a good life' rather than 'availability of means to the good life'. The 'access to the means to live a good life' depends on the 'beings and doings. There must be a value and reason to value these functionings. For example, capabilities provide real freedom to achieve the functionings, such as attending school or accessing medical services.

Further, the freedom to access has an impact on resources. The increasing access through capacity development leads to the utilization of various resources, which in turn influence happiness and well-being. Again, the utilization of resources has an ecological footprint. Thus, there is an interconnection between happiness and ecological footprint. The theoretical background states that the ecological footprint influences happiness through access to resources and the utilization of resources. We have shown the word count figure of the literature review in the context of happiness and ecological footprint.

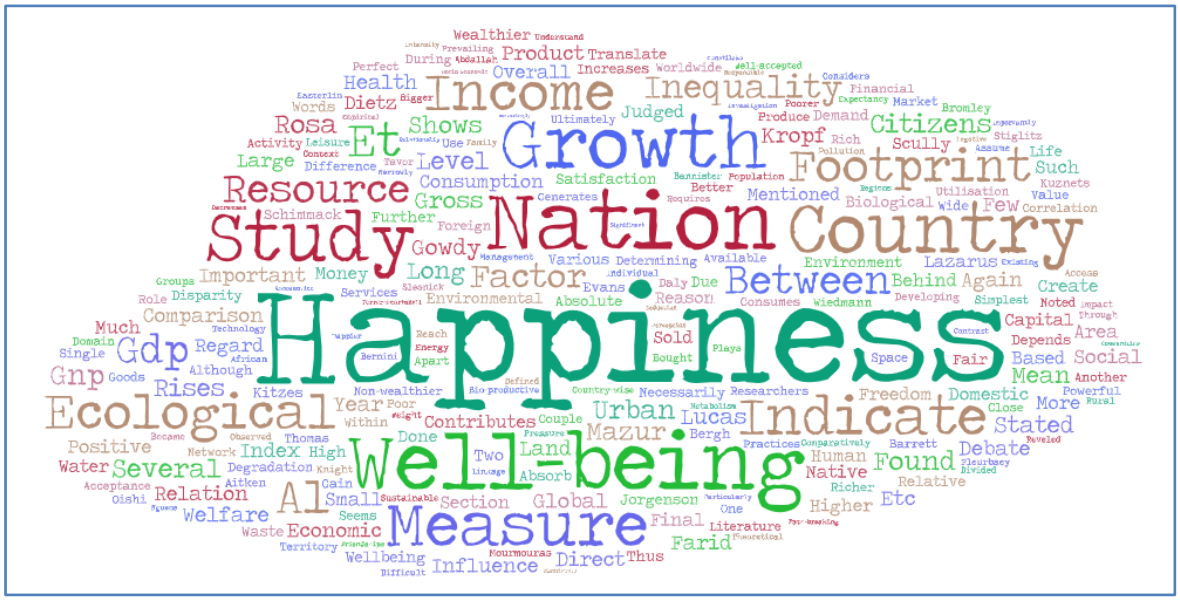

Figure 1: Word cloud from literature review
Source: Author's own

3. DATABASE

The study utilizes cross-country panel data from 55 countries spanning the period from 2006 to 2021. To the best of our knowledge, this present database covers the largest set of countries and spans the longest period. We use the *Happy Planet Index* (HPI) database for the analysis of happiness. It is collected from www.happyplanetindex.org. We have further categorised all the countries into four distinct groups based on their income levels, namely higher-income countries, upper-middle-income countries, lower-middle-income countries, and lower-income countries. This is done by following the World Bank Atlas Method of classification. The key variable in our study is the ecological footprint, which is collected from the *Global Footprint Network* database. The database on the other explanatory variables is collected from various sources. The database on income inequality is sourced from the *Standardized World Income Inequality* database. The database on GDP per capita, inflation, forest coverage, population growth, and urban population is the *World Development Indicators* database. Inflation, forest coverage, population growth, and urban population. The FDI net inflow database is borrowed from the *World Bank Data* database.

4. METHODOLOGY

In the present study, we use the panel data regression methods to explore the relationship between happiness and ecological footprint. In addition to the ecological footprint, we consider some control variables in the econometric model. As we have both the cross-section and time series databases, it is better to utilize the panel data regression techniques. Further, there is a specific advantage of using a panel data regression model as it produces a greater number of degrees of freedom than a cross-sectional or time series specific model (Hsiao, 2007).

However, we frame the following panel data regression model for the analysis:

$$HPI_{it} = \alpha_{it} + \beta_{it}EF + \gamma_{it}X + D_{it} + \varepsilon_{it}$$

where HPI is the index value of the Happy Planet Index, and EF indicates the ecological footprint. In subscripts, *i* indicates the number of countries (i= 1…... N), and *t* denotes the times (t=1…... T). The vector

X denotes all the control variables, namely, Gini coefficient, FDI inflow, trade volume, share of manufacturing, GDP per capita, forest coverage, inflation, population growth, and urban population.

There is only one index in the econometric model. Happy Planet Index (HPI). The measurement unit of the ecological footprint is global hectares. The net inflow of foreign direct investment, trade volume, and share of manufacturing data are available as a percentage of GDP. The GDP per capita is measured by the ratio of GDP to population. The value of GDP is constant at 2015 US dollars. The forest coverage area is calculated in square kilometers. The inflation is measured by the annual percentage change of the consumer price index. Population growth is measured by the annual growth of the population. The urban population is measured by the ratio of urban population to total population. It is important to mention that country-wise data of all the above-mentioned variables are collected from secondary sources. The details of the sources are mentioned in the database section.

In our model, dummy (D) indicates the dummy variables. We use dummy variables to compare the HPI across countries. More specifically, we use 54 dummy variables, as we have 55 countries.

We have performed the fixed effect model using the least squares dummy variables (LSDV) estimation procedure and the random effect model by generalized least squares (GLS) estimation procedure. The Breush & Pagan Lagrange Multiplier test, Restricted F-test, and Hausman specification test are applied to select the best-fitted model.

5. RESULTS

5.1 Trends of Happy Planet Index Across Countries

We have shown the trend of the Happy Planet Index (HPI) in the figure below for the years 2006 and 2021. According to available data on HPI, we find that the value of HPI in Singapore was the lowest in the year 2006, and the value increased to 19.1 in the year 2021. The countries like South Africa, Cameroon, Nigeria, and Kenya remain at the bottom level in both years. On the other side, countries like Costa Rica, Côte d'Ivoire, Colombia, Chile, and Thailand had shown a higher value of HPI in both years. It is observed that there are eleven countries where the HPI value reduced from the year 2006 to 2021, which indicates that the happiness score of these countries decreased during the study period. These countries are, namely, Bolivia, Chile, Colombia, Costa Rica, Côte d'Ivoire, India, Malaysia, Nepal, Paraguay, Sri Lanka, and Thailand. More specifically, in countries like Colombia, Costa Rica, Côte d'Ivoire, and India, the HPI was reduced by nearly eleven, whereas in Nepal and Chile, such a reduction was less than one.

If we observe the low middle-income group countries, it can be observed that the HPI value of Cote d'Ivoire was the highest, while Cameroon showed the lowest values in the year 2006. But in the year 2021, the HPI value of Cote d'Ivoire reduced while the value of HPI improved for Cameroon. Nigeria showed the lowest value of HPI, while El Salvador showed the highest value of HPI for the year 2021. In the case of upper-middle-income group countries, South Africa showed the lowest HPI value, while Costa Rica showed the highest HPI value in the year 2006. But in the year 2021, the HPI value of Costa Rica reduced while the HPI value of South Africa improved. In the case of high-income group countries, we find Singapore secured the lowest value of HPI, while Chile secured the highest value of HPI for the year 2006. In the year 2021, the HPI value of Chile slightly reduced while the HPI value of Singapore improved significantly.

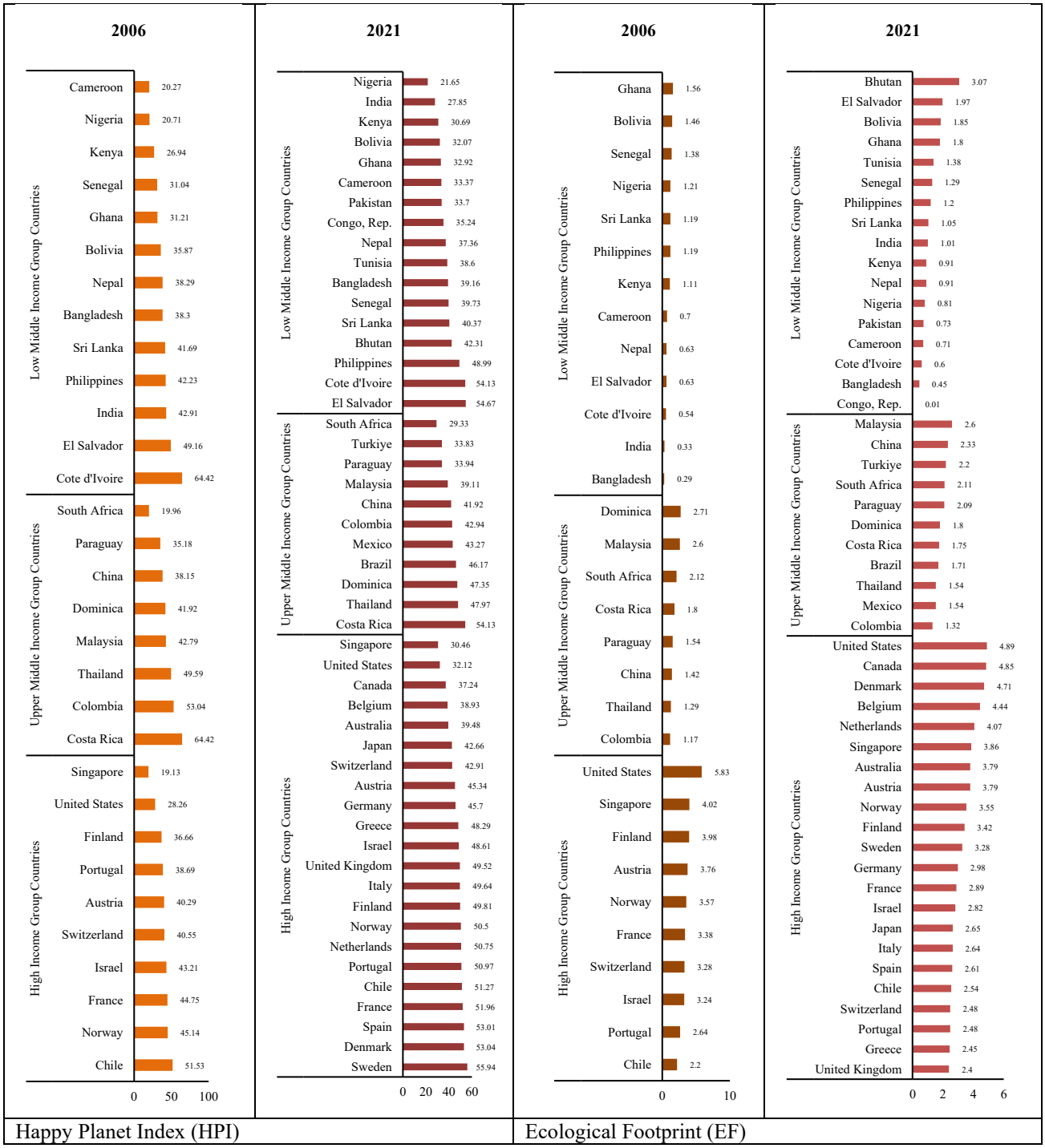

Figure 2: HPI and Ecological Footprint across countries for the years 2006 and 2021
Source: Author's own calculation

5.2 Trends of Ecological Footprint Across Countries

We have shown the trend of ecological footprint (EF) in Figure 2 for the years 2006 and 2021. According to available data on ecological footprint, we find that the value of ecological footprint in Bangladesh was the lowest in the year 2006, and the value increased to 0.45 in the year 2021. The countries like India, Côte d'Ivoire, Nepal, and El Salvador remain at the bottom level in both years. On the other side, countries like the United States, Singapore, Finland, Austria, and Norway have shown a higher value of ecological footprint in both years. It is observed that there are fifteen countries where the ecological footprint reduced from 2006 to 2021, which indicates that the ecological footprint of these countries decreased during the study period. These countries are, namely, Costa Rica, Dominica, Finland, France, Israel, Kenya, Nigeria, Norway, Portugal, Senegal, Singapore, South Africa, Sri Lanka, Switzerland, and the United States.

If we look into the low-middle-income group countries, it can be observed that the ecological footprint

of Ghana was the highest, while Bangladesh showed the lowest values in the year 2006. Again, in the year 2021, the ecological footprint increased for both Ghana and Bangladesh. The Congo republic shown the lowest value of ecological footprint, while Bhutan showed the highest value for the year 2021. In the case of upper-middle-income group countries, Colombia showed the least ecological footprint value, while Dominica showed the highest ecological footprint value in the year 2006. But in the year 2021, the ecological footprint value of Dominica reduced, while in Colombia, the value increased. In the case of high-income group countries, we find Chile at the lowest level, while the United States is at the highest level in the year 2006. In the year 2021, the ecological footprint of Chile increased while the ecological footprint of the United States reduced. However, the United States was at its highest while the United Kingdom was at its lowest level in the year 2021.

5.3 Econometric Results

In this section, we empirically examine the role of ecological footprint on happiness. As we have both time series and cross-sectional observations, we use the panel data econometric method for the analysis. We specifically estimated three models, which are Model I, Model II, and Model III. Model I considers all countries. Model II considers only lower-middle-income group countries (LMIC). Model III considers high-income group countries (HIC). It is worthy to mention that there is no multicollinearity among the explanatory variables, as evidenced by the variance inflation factor (VIF) that remains below 5, and robust standard errors are used to correct for heteroscedasticity.

Table 1 presents the estimated result of Model I. During the estimation of the model, we find both the Restricted-F test and LM test are significant, leading us to further perform the Hausman test for the selection between the Random Effect Model (REM) and Fixed Effect Model (FEM). We find the Hausman test statistic is also significant. Thus, we consider the FEM for interpretation.

We find an inverse and significant relationship between the ecological footprint and the HPI. This finding confirms the inverse relationship between the ecological footprint and HPI. This means that there is a need to reduce the ecological footprint to increase the HPI. The trade volume positively and significantly influences the HPI. A country with a higher volume of trade may increase its income from foreign currency exchange, which in turn makes the exporting country wealthier. Thus, the volume of trade increases the happiness of the country. The share of the manufacturing sector in the total output of the country negatively and significantly influences the HPI. The larger share of the manufacturing sector in total output may indicate the dominance of the manufacturing sector in output generation. Again, the dominance of the manufacturing sector indicates more production of goods as well as pollution. The level of pollution from the manufacturing sector may negatively impact the happiness of the citizens.

We find that GDP per capita positively and significantly influences the HPI. It may be that the citizens of the wealthier country can manage their well-being better, which increases their happiness. On the other hand, the citizens of a comparatively less wealthy country struggle to manage their well-being, which negatively influences their happiness. It is found that the forest coverage positively and significantly influences the HPI. The health-related risks are related to the environment of the country. Again, the presence of forests stabilizes environmental pollution. In this way, the forest coverage enhances the happiness of the country.

Table 1: Estimated Result of Model I *(All countries)*

Variables	Fixed Effect Model (FEM)			Random Effect Model (REM)		
	Coefficient	Std. Err.	t value	Coefficient	Std. Err.	t value
Ecological footprint	-2.421	0.479	-5.05***	-2.477	0.466	-5.32***
Gini inequality index	-0.055	0.050	-1.10	-0.051	0.047	-1.09
FDI inflow	-0.026	0.019	-1.36	-0.030	0.019	-1.54
Trade volume	0.026	0.011	2.31**	0.0130	0.010	1.26
Share of manufacturing	-0.260	0.076	-3.43***	-0.242	0.072	-3.35***
GDP per capita	0.004	0.001	5.23***	0.206	0.049	4.13***
Forest coverage	0.058	0.025	2.33**	0.056	0.025	2.27***
Inflation	0.016	0.015	1.01	0.022	0.016	1.38
Population growth	-0.317	0.204	-1.55	-0.426	0.201	-2.12**
Urban population	-0.002	0.013	-0.16	0.165	1.269	0.01
Constant	43.533	3.253	13.38***	-2.477	0.466	-5.32***
Country dummy	Yes	0	0	Yes	0	0
Sigma_u	11.322	0	0	8.253	0	0
Sigma_e	2.412	0	0	2.412	0	0
Rho	0.956	0	0	.921	0	0
F value	8.17***	0	0	69.41***	0	0

F (u_i=0)	125.17	0	0	0 (assumed)	0	0
Corr(u_i, Xb)	-0.594	0	0	0.1163	0	0
R square (within)	0.1285	0	0	0.0179	0	0
R square (between)	0.0059	0	0	0.0187	0	0
R square (overall)	0.0040	0	0	-2.477	0	0
LM test	0	0	0	2618.45***	0	0
Hausman test	87.91***	0	0	0	0	0
Number of observations	615	0	0	615	0	0

Source: Author's own calculation

In Table 2, we present the estimated results of Model II (Lower middle-income group countries). During the estimation of the model, we find both the Restricted-F test and LM test are significant, leading us to further perform the Hausman test for the selection between the Random Effect Model (REM) and Fixed Effect Model (FEM). We find the Hausman test statistic is also significant. Thus, we consider the FEM for interpretation. We find an inverse and insignificant relationship between the ecological footprint and the HPI. The inequality index inversely and significantly influences the HPI. It means that more inequality reduces happiness. The trade volume positively and significantly influences the HPI. We find an inverse relationship between inflation and the HPI. It indicates that the inflationary situation reduces happiness.

Table 2: Estimated Result of Model II *(Lower middle income group countries)*

Variables	Fixed Effect Model (FEM)			Random Effect Model (REM)		
	Coefficient	Std. Err.	t value	Coefficient	Std. Err.	t value
Ecological footprint	-0.330	1.03	-0.32	-17.215	1.104	-15.59***
Gini inequality index	-0.294	0.145	-2.02**	-0.414	0.087	-4.77***
FDI inflow	-0.171	0.131	-1.3	1.112	0.205	5.42***
Trade volume	0.084	0.025	3.37***	0.047	0.016	3.01***
Share of manufacturing	-0.322	0.194	-1.66	-0.444	0.092	-4.83***
GDP per capita	-0.001	0.002	-0.37	0.002	0.003	6.81***
Forest coverage	0.005	0.006	0.94	0.006	0.004	-0.16
Inflation	-0.034	0.020	-1.64*	-0.016	0.041	-0.38
Population growth	0.119	0.516	0.23	-3.257	0.849	-3.83***
Urban population	0.021	0.024	0.88	0.085	0.037	2.31***
Constant	59.591	7.959	7.49***	83.731	7.152	11.71***
Country dummy	Yes	0	0	Yes	0	0
Sigma_u	10.480	0	0	0	0	0
Sigma_e	2.072	0	0	2.072	0	0
Rho	0.962	0	0	0	0	0
F value	2.77***	0	0	0	0	0
F (u_i=0)	56.63***	0	0	0	0	0
Corr (u_i, Xb)	-0.011	0	0	0 (assumed)	0	0
R square (within)	0.1899	0	0	0.0181	0	0
R square (between)	0.0695	0	0	0.9353	0	0
R square (overall)	0.0987	0	0	0.8181	0	0
Wald chi square	0	0	0	575.64***	0	0
LM test	0	0	0	0	0	0
Hausman test	256.96***	0	0	0	0	0
Number of observations	139	0	0	139	0	0

Source: Author's own calculation

The estimated result of Model III (Lower middle income group countries) is shown in Table 3. During the estimation of the model, we find both the Restricted-F test and LM test are significant, leading us to further perform the Hausman test for the selection between the Random Effect Model (REM) and Fixed Effect Model (FEM). We find the Hausman test statistic is insignificant. Thus, we consider the REM for interpretation. A direct and significant relationship between the GDP per capita and the HPI is observed. We find a direct and significant relationship between inflation and the HPI. The growth of the population negatively and significantly influences the HPI.

Table 3: Estimated Result of Model III *(High-income group countries)*

Variables	Fixed Effect Model (FEM)			Random Effect Model (REM)		
	Coefficient	Std. Err.	t value	Coefficient	Std. Err.	t value
Ecological footprint	-2.003	1.885	-1.06	-1.995	1.71	-1.17
Gini inequality index	-0.071	0.157	-0.46	-0.058	0.145	-0.4
FDI inflow	-0.018	0.088	-0.21	-0.022	0.086	-0.25
Trade volume	0.032	0.025	1.26	0.035	0.024	1.49
Share of manufacturing	-0.204	0.187	-1.1	-0.160	0.173	-0.93
GDP per capita	0.003	0.001	2.97***	0.003	0.001	3.32***
Forest coverage	0.002	0.003	1.27	0.002	0.003	1.14
Inflation	0.102	0.034	3.02***	0.103	0.033	3.09***
Population growth	-2.083	0.514	-4.05***	-2.129	0.496	-4.29***
Urban population	-0.043	0.031	-1.4	-0.042	0.03	-1.41
Constant	44.442	9.236	4.81***	42.589	8.967	4.75***
Country dummy	Yes	0	0	Yes	0	0
Sigma_u	9.0545	0	0	10.5697	0	0
Sigma_e	3.0521	0	0	3.0521	0	0
Rho	0.9230	0	0	0.9230	0	0
F value	3.75***	0	0	0	0	0
F (u_i=0)	83.28***	0	0	0	0	0
Corr(u_i, Xb)	-0.0496	0	0	0 (assumed)	0	0
R-squared (within)	0.1755	0	0	0.1749	0	0
R-squared (between)	0.0843	0	0	0.1018	0	0
R-squared (overall)	0.0986	0	0	0.1159	0	0
Wald chi-square	0	0	0	39.51***	0	0
LM test	0	0	0	706.92***	0	0
Hausman test	1.44	0	0	0	0	0
Number of observations	203	0	0	203	0	0

Source: Author's own calculation

6. SUMMARY AND CONCLUSION

The happiness and well-being of a nation vary across countries. Previously, happiness was thought of as a subjective measure. Later, the utilitarian thought of happiness gradually developed. The utilitarian thought aims to maximize the welfare of people. However, the Nobel Laureate economist, AK Sen, suggested focusing on two things. One is 'individual freedom' instead of 'individual welfare,' and another is 'access to the resources. The increasing access to resources will enhance the utilization of various resources, which in turn influence happiness and well-being. Again, the utilization of resources has an ecological footprint. Thus, there is an interconnection between happiness and ecological footprint. In addition to the ecological footprint, there may be several factors affecting happiness. Some of these factors are inequality, FDI inflow, trade volume, role of manufacturing, GDP, area under forest, inflation, and population. It is worth mentioning that the existing literature is unable to examine happiness and its determining factors across countries. More specifically, there is a clear dearth in the literature that examines the relationship between happiness and ecological footprint across countries. Thus, the present study aims to bridge this research gap by empirical investigation of panel data from 53 countries over two decades. Moreover, our empirical investigation is based on a theoretical background of the study.

It is found that there are eleven countries where the HPI value reduced during the period 2006 to 2021. This means that the happiness score of these countries decreased during the study period. These countries are, namely, Bolivia, Chile, Colombia, Costa Rica, Côte d'Ivoire, India, Malaysia, Nepal, Paraguay, Sri Lanka, and Thailand. Again, we find that there are fifteen countries where the ecological footprint reduced during the study period. These countries are, namely, Costa Rica, Dominica, Finland, France, Israel, Kenya, Nigeria, Norway, Portugal, Senegal, Singapore, South Africa, Sri Lanka, Switzerland, and the United States. Thus, we can state that in most of the countries the happiness index value as well as the ecological footprint increased during the study period. This indicates that there may be a relation between the rise in happiness and the ecological footprint across countries. We verified such a relationship by panel data analysis. Our analysis reveals an inverse and significant relationship between HPI and ecological footprint. This means that the ecological footprint influences the HPI negatively and significantly. Thus, there is a need of global level policy action to monitor the ecological footprint to enhance happiness and well-being.

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