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ORIGINAL

Developing an integrated happiness index and analysis of Korea's happiness level and policy directions

Desarrollo de un índice de felicidad integrado y análisis del nivel de felicidad de Corea y orientaciones políticas

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ABSTRACT

This study aims to overcome the limitations of various internationally recognized happiness indices by developing an integrated happiness index to analyze Korea's happiness level and suggest future policy directions. The scope of the study includes seven major international datasets related to happiness, such as the World Happiness Report, OECD Better Life Index, and the IPSOS Global Happiness Index. Methodologically, literature review and data analysis were conducted, particularly employing Multidimensional Scaling (MDS) to visually analyze characteristics of happiness levels across different countries. The analysis revealed that national happiness rankings are influenced not only by economic performance but also by factors such as social trust, environmental sustainability, and subjective well-being. Applying the developed integrated happiness index to OECD countries, Korea ranked 35th out of 38 nations, highlighting the need for improvements in subjective happiness and environmental sustainability relative to economic performance. Specifically, Korea showed a significant discrepancy between GDP per capita and happiness index, suggesting that long working hours and low social connectedness negatively affect subjective well-being. In conclusion, this study emphasizes the need for a multidimensional approach that encompasses social and cultural factors beyond economic growth to enhance the effectiveness of happiness policies. It further recommends prioritizing policies focused on mental health support and strengthening social ties in Korea alongside continued economic growth.

Keywords: Integrated; Happiness; Index; Multidimensional Scaling; MDS; Happiness Policy; Subjective Well-Being; Korea's Happiness.

RESUMEN

Este estudio pretende superar las limitaciones de diversos índices de felicidad reconocidos internacionalmente desarrollando un índice de felicidad integrado para analizar el nivel de felicidad de Corea y sugerir futuras orientaciones políticas. El ámbito del estudio incluye siete grandes conjuntos de datos internacionales relacionados con la felicidad, como el Informe Mundial sobre la Felicidad, el Índice para una Vida Mejor de la OCDE y el Índice Global de Felicidad de IPSOS. Metodológicamente, se llevó a cabo una revisión bibliográfica y un análisis de datos, en particular empleando la Escala Multidimensional (MDS) para analizar visualmente las características de los niveles de felicidad en los distintos países. El análisis reveló que las clasificaciones nacionales de felicidad están influidas no sólo por los resultados económicos, sino también por factores como la confianza social, la sostenibilidad medioambiental y el bienestar subjetivo. Aplicando el índice de felicidad integrado desarrollado a los países de la OCDE, Corea ocupó el puesto 35 de 38 naciones, lo que pone

de relieve la necesidad de mejorar la felicidad subjetiva y la sostenibilidad medioambiental en relación con los resultados económicos. En concreto, Corea mostró una discrepancia significativa entre el PIB per cápita y el índice de felicidad, lo que sugiere que las largas jornadas laborales y la escasa conexión social afectan negativamente al bienestar subjetivo. En conclusión, este estudio subraya la necesidad de un enfoque multidimensional que abarque factores sociales y culturales más allá del crecimiento económico para mejorar la eficacia de las políticas de felicidad. Además, recomienda dar prioridad a las políticas centradas en el apoyo a la salud mental y el fortalecimiento de los vínculos sociales en Corea junto con el crecimiento económico continuado.

Palabras clave: Integrado; Felicidad; Índice; Escala Multidimensional; MDS; Política de Felicidad; Bienestar Subjetivo; Felicidad de Corea.

INTRODUCTION

Research background and necessity

Happiness, well-being, and life satisfaction are internationally recognized key indicators for assessing individual quality of life and national development. Recently, various reports and databases have been developed internationally to measure these indicators and evaluate national happiness levels and policy effectiveness (Helliwell, Huang, Wang, & Norton, 2021; OECD, 2020; Lee et al., 2013; Lee et al., 2014; Choi 2004; Choi & Baek, 2003). Major indices include the World Happiness Report, OECD Better Life Index, IPSOS Global Happiness Index, Happy Planet Index, Legatum Prosperity Index, World Value Survey, and World Database of Happiness. However, these indices often differ significantly in rankings and results for the same country due to varying focuses and evaluation methods (Lee, 2022; Heo, 2022). This discrepancy causes confusion among researchers and policymakers, complicating policy formulation and priority-setting aimed at enhancing happiness (Kim et al., 2022; Kwak, 2022; Ki et al., 2013). Particularly, Korea frequently ranks in the lower-middle range across these international happiness indices, necessitating a comprehensive and integrated analysis (Heo, 2022; Kwak, 2022). This study addresses these issues by systematically analyzing international happiness indices and adopting an integrated approach for more effective policy formulation.

Research objectives

This study aims, firstly, to comparatively analyze and understand the characteristics and limitations of evaluation indicators and methodologies of major international happiness datasets. Secondly, it seeks to understand global and OECD countries' happiness levels and characteristics through international data. Thirdly, it aims to develop an objective and comprehensive integrated happiness index using various international datasets. Lastly, it applies this integrated happiness index to OECD countries to analyze Korea's happiness level and propose directions for future happiness-enhancing policies.

Research questions and scope

The study establishes the following primary research questions: First, what evaluation indicators and methodologies underlie international happiness datasets? Second, what are the overall rankings and characteristics of OECD countries based on international happiness datasets? Third, how can an integrated happiness index combining various international datasets be constructed? Fourth, what relationship exists between the developed integrated happiness index and GDP per capita? Fifth, how can Korea's happiness-enhancing policies be improved based on the integrated happiness index and economic indicators?

The study's scope includes seven major international happiness datasets, with analysis conducted using their latest available data.

Overview of international data on happiness

Conceptual definitions of happiness, well-being, and life satisfaction

Amid various approaches aimed at evaluating individual quality of life and social development, the concepts of happiness, well-being, and life satisfaction are interrelated yet distinct measures used to assess individual and social quality of life from different perspectives (Busseri & Sadava, 2021; Clark et al., 2020; Lee & Choi, 2021; Layard & Ward, 2020).

Happiness mainly refers to emotional satisfaction or transient feelings experienced by individuals, encompassing both the frequency and intensity of positive emotions (Diener et al., 2020; Joshanloo, 2021). In contrast, well-being comprehensively captures the overall condition of individuals and society, including both material prosperity and mental health, combining objective conditions (such as income and health) with subjective evaluations (such as life satisfaction) (Lamers et al., 2022; VanderWeele, 2020). Life satisfaction

represents a subjective and cognitive judgment regarding one's overall life, emphasizing long-term contentment rather than momentary emotional states (Joshanloo, 2021; Lee & Choi, 2021).

These three concepts are defined and applied differently depending on their measurement indicators and evaluation methods and are reflected in various ways within major international comparative data (Clark et al., 2020; VanderWeele, 2020). Several criteria highlight the differences among these concepts. First, regarding the temporal focus, happiness concentrates on momentary emotions, whereas well-being and life satisfaction assess medium- to long-term quality of life (Busseri & Sadava, 2021).

In terms of evaluation methods, happiness measures the frequency and intensity of emotions, while well-being includes both material conditions and mental satisfaction, and life satisfaction emphasizes a cognitive evaluation of life as a whole (Clark et al., 2020; Diener et al., 2020). Lastly, from a comprehensiveness perspective, well-being represents an integrated concept encompassing material conditions and social environments, whereas happiness and life satisfaction are predominantly based on individual, subjective evaluations (Lamers et al., 2022).

Table 1. Comparison of happiness, well-being, and life satisfaction: definitions, focus, and evaluation methods

Concept	Definition	Focus	Evaluation Method	Measurement Subject	Temporal Scope
Happiness	An individual's positive emotional state and satisfaction	Momentary emotions, subjective feelings	Frequency and intensity of emotions	Individual	Short-term
Well-being	Overall quality of life including an individual's material and mental health	Material and social conditions, and subjective evaluation	Objective conditions (income, health) and subjective evaluation	Individual and society	Medium to long-term
Life Satisfaction	An individual's cognitive evaluation of their overall life	Individual's overall satisfaction	Subjective evaluation of one's life	Individual	Long-term

Introduction of major international happiness-related data

The major international data related to happiness can be categorized into seven types, as outlined below.

First is the World Happiness Report. Published by the Sustainable Development Solutions Network (SDSN) under the United Nations, the World Happiness Report is one of the most representative sources assessing happiness levels by country. It utilizes six major indicators: GDP per capita, social support, healthy life expectancy, freedom, generosity, and perceptions of corruption. Its primary feature is calculating happiness scores based on subjective survey results for each country, comprehensively assessing both social and economic factors.

Second is the OECD Better Life Index. This index, developed by the OECD to assess the quality of life among member and non-member countries, measures both material conditions and overall quality of life. The index employs specific evaluation indicators across 11 areas, including housing, income, employment, education, environment, civic engagement, health, and subjective well-being. Its distinctive feature is the ability to provide personalized comparisons based on user-selected indicators, making it highly useful for policy purposes.

Third is the IPSOS Global Happiness Index, which measures individuals' happiness through IPSOS's global surveys. It assesses subjective happiness related to everyday factors, such as family, health, safety, financial conditions, and leisure time. Recent surveys indicate that Northern European and North American countries generally display higher levels of happiness, making this index valuable for comparative analysis and tracking happiness trends across countries. Its notable feature is a relatively simple questionnaire that covers over 30 countries worldwide, emphasizing subjective happiness.

Fourth is the Happy Planet Index. This unique index simultaneously evaluates human happiness and environmental sustainability. The evaluation metrics consist of a combination of well-being, life expectancy, and ecological footprint. Its distinctive feature is the emphasis on environmental sustainability, highlighting efficient resource use and environmental preservation as essential for maintaining human happiness and welfare in the long term.

Fifth is the Legatum Prosperity Index, published by the Legatum Institute. This index comprehensively measures economic wealth, social prosperity, and well-being. The evaluation covers 12 areas, including economy, education, health, safety, freedom, and social capital. Its unique feature is its focus not only on economic prosperity but also on social stability and human values.

Sixth is the World Values Survey (WVS). This is an extensive research project investigating the values, beliefs, and cultural attitudes of various countries. Its evaluation indicators encompass broad topics such as happiness, life satisfaction, religious values, social trust, and political participation. Its main feature lies in analyzing the

relationship between socio-cultural factors and happiness, providing insights into long-term trends.

Seventh is the World Database of Happiness. This database systematically collects and organizes research results related to happiness worldwide. Its evaluation indicators consolidate various survey results and research data regarding subjective happiness. This database holds significant academic and practical value, facilitating comparisons across countries, identifying research trends, and informing happiness-related policymaking.

The following table summarizes the characteristics of international data related to happiness:

Table 2. Characteristic of internation happiness-related data

Database	Publishing Organization	Evaluation Indicators	Features	Initial Publication Year
World Happiness Report	UN Sustainable Development Solutions Network (SDSN)	GDP per capita, social support, life expectancy, freedom, generosity, perceptions of corruption	Based on country-specific subjective surveys; integrates social and economic factors	2012
OECD Better Life Index	OECD	Housing, income, employment, education, environment, civic engagement, health, subjective well-being	Enables personalized comparisons; highly useful for policy applications	2011
IPSOS Global Happiness Index	IPSOS (Market Research Company)	Subjective happiness about family, health, safety, financial status, leisure time, etc.	Provides data for over 30 countries worldwide; simple survey format	2011
Happy Planet Index	New Economics Foundation	Well-being, life expectancy, ecological footprint	Emphasizes a combination of environmental sustainability and quality of life	2006
Legatum Prosperity Index	Legatum Institute	Economy, education, health, safety, freedom, social capital, etc. (12 areas)	Considers both economic prosperity and social stability	2007
World Value Survey	World Values Survey Association	Happiness, life satisfaction, religious values, social trust, and political participation	Analyzes the relationship between socio-cultural values and happiness	1981
World Database of Happiness	Erasmus University Rotterdam (Ruut Veenhoven)	Diverse survey and research data on subjective happiness	Systematic compilation of happiness research data; suitable for academic use	2000

Conceptual understanding of happiness, well-being, and life satisfaction, and the need for an integrated approach

Essential similarities and limitations in practical policy distinctions

1. Integrated approach to happiness and well-being: Amartya Sen, in his "capability approach," argues that well-being encompasses an individual's capability to live a "valuable life," broadly including happiness and life satisfaction. Similarly, recent studies emphasize that happiness, well-being, and life satisfaction should be integrated within policy contexts, highlighting their conceptual interconnectedness and practical utility when treated as unified policy objectives (Clark et al., 2020; VanderWeele, 2020). Richard Layard also asserts in his "Economics of Happiness" that the ultimate policy objective is enabling individuals to lead happier and more fulfilling lives, underscoring the shared directionality of well-being and life satisfaction (Layard & Ward, 2020). Thus, rather than separating these three concepts, recent research supports adopting an integrated policy framework for enhanced practicality and effectiveness (Lee & Choi, 2021; VanderWeele, 2020).

2. Homogeneity of life satisfaction and well-being: Ed Diener and Robert Biswas-Diener define subjective well-being as encompassing both happiness and life satisfaction, arguing these elements are essentially identical and challenging to separate within policy contexts (Diener et al., 2020; Joshanloo, 2021). Specifically, life satisfaction is regarded as a critical component of well-being, highlighting strong interrelationships between happiness and life satisfaction (Lamers et al., 2022; Linton et al., 2020). Recent studies also emphasize that policies aimed at improving overall well-being inherently involve promoting life satisfaction and happiness simultaneously, suggesting the practical irrelevance of distinguishing these concepts in policy implementation (Clark et al., 2020; Lee & Choi, 2021).

Lack of necessity for distinctions in practical policy application

The concepts of happiness, well-being, and life satisfaction are often used interchangeably in both academic and policy discussions. However, several scholars have highlighted their distinct yet interconnected nature. For

instance, in the "capability approach," well-being encompasses an individual's ability to lead a life they value, integrating aspects of happiness and life satisfaction (Nussbaum, 2011). This perspective suggests that policies aiming to enhance well-being inherently address both happiness and life satisfaction. Similarly, the "Economics of Happiness" framework posits that the ultimate goal of policy should be to enable individuals to lead happier and more fulfilling lives, indicating that well-being and life satisfaction share common objectives (Layard, 2005).

Furthermore, subjective well-being is defined as encompassing life satisfaction and happiness, emphasizing their practical equivalence and the difficulty of separating them in policy contexts (Diener et al., 2003). This interconnectedness implies that, for practical policy purposes, it may be more effective to treat these concepts as a unified goal rather than attempting to distinguish between them.

Advantages of an integrated approach to happiness, well-being, and life satisfaction

1. Policy consistency and efficiency: adopting an integrated approach reduces unnecessary complexity in policy goal-setting, data collection, and performance evaluation. Radcliff (2020) argues that policies broadly focused on enhancing quality of life simultaneously promote both happiness and well-being, while emphasizing distinctions among these concepts can hinder policy efficiency. Universal policies, such as welfare programs and income redistribution, have been found effective in simultaneously enhancing happiness and overall well-being, illustrating that focusing on subtle conceptual differences is unnecessary (Helliwell et al., 2020; VanderWeele, 2020).
2. Integration of Academic and Practical Approaches: Graham (2020) emphasizes in her studies on happiness inequality that viewing happiness, well-being, and life satisfaction along a single continuum has significant practical implications for policy. Similarly, recent research highlights that an integrated view is practically advantageous, facilitating comprehensive policy frameworks and more effective outcomes (Clark et al., 2020; Diener et al., 2020).

In conclusion, although happiness, well-being, and life satisfaction theoretically differ, scholarly discussions stress that maintaining clear distinctions does not yield practical benefits for policy design and implementation. Studies by scholars such as Amartya Sen, Richard Layard, and Ed Diener suggest an integrated approach to these concepts is more effective for maximizing policy outcomes, simplifying complexity, and achieving practical results (Clark et al., 2020; Diener et al., 2020; Radcliff, 2020).

METHOD

Research design

Research methodology

This study employs the following research methods to comparatively analyze major international data on happiness, well-being, and life satisfaction and to derive policy implications.

First, literature review is conducted. Existing research and reports are analyzed to examine concepts, evaluation indicators, and methodologies associated with international happiness data. Specifically, original sources and related literature are reviewed, including the World Happiness Report, OECD Better Life Index, IPSOS Global Happiness Index, Happy Planet Index, Legatum Prosperity Index, World Value Survey, and the World Database of Happiness.

Second, data analysis is performed. Countries' happiness rankings are compared based on evaluation indicators for each dataset, and correlations between indicators are analyzed to understand reasons for ranking differences. Additionally, the characteristics of the data and Korea's rankings are examined to derive policy implications.

Research subjects and data

The research analyzes seven internationally recognized happiness-related datasets. The years of data utilization are outlined in table 3, which shows the annual utilization status of international happiness data.

Table 3. Years of data utilization by Dataset

Database	Data Year	Remarks
World Happiness Report	2023	Score
OECD Better Life Index	2024	Score
IPSOS Global Happiness Index	2024	Percentage(%)
Happy Planet Index	2021	Score
Legatum Prosperity Index	2023	Scores converted from rankings
World Value Survey	2022	Percentage(%)
World Database of Happiness	2019	Score

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Analytical procedures and limitations

Regarding the analytical procedure, the study begins by summarizing key indicators and evaluation methods of each dataset, followed by comparing happiness rankings and evaluation results across countries. It further analyzes Korea's ranking within each indicator and identifies potential areas for improvement, drawing policy implications based on data characteristics. However, the study has several limitations. Differences in indicators and methodologies across datasets create constraints in direct comparisons. Additionally, cultural and social characteristics of specific countries might not be fully captured by the indicators, and subjective measurements of happiness and well-being could introduce individual variability as an inherent limitation.

RESULTS

Analysis

Descriptive statistics

The table below provides useful information for analyzing national happiness levels and measurement methodologies by comparing key indicators across various happiness indices and databases. Each indicator is presented with maximum, minimum, and average values based on comprehensive data, contributing to a quantitative understanding of the diversity of happiness.

First, the World Happiness Report analyzed 143 countries, showing a maximum happiness score of 7,74, a minimum of 1,72, and an average of 5,53, illustrating the global distribution of happiness. The OECD Better Life Index (2024) covers 41 countries, reporting a maximum score of 7,60, a minimum of 4,90, and a relatively high average score of 6,60.

The IPSOS Global Happiness Index (2024) is measured in percentages (%) across 30 cases, with a maximum value of 85,00 %, minimum of 48,00 %, and an average of 70,77 %, indicating generally high happiness levels across the included countries. On the other hand, the Happy Planet Index (2021) analyzed 146 countries, showing a maximum value of 57,90, minimum of 13,70, and an average of 37,27, reflecting an integrated measure of environmental sustainability and life satisfaction.

The Legatum Prosperity Index (2023) covered the largest number of countries, 167, presenting data with a maximum score of 167,00, a minimum score of 1,00, and an average of 83,76, offering important insights into the relationship between prosperity and happiness. The World Value Survey (2017-2022), measured in percentages (%), included 67 countries, with a maximum of 97,30 %, a minimum of 51,90 %, and an average of 85,19 %, revealing generally high levels of reported happiness.

Lastly, the World Database of Happiness (2010-2019) surveyed 158 countries, recording a maximum value of 8,20, minimum of 3,80, and an average of 6,27, providing comprehensive insights into happiness levels over various time points.

Given that each happiness index employs different measurement methods and standards, comparisons and analyses of national happiness require careful consideration of each dataset's unique characteristics. Examining the average values and range between maximum and minimum values allows for assessment of the variance in happiness levels, providing insights into how each indicator defines and measures happiness. Such comparative analysis enhances a multidimensional understanding of happiness and serves as foundational data for deriving policy implications.

Table 4. Descriptive statistics of happiness-related indics

Index/Database	Number of Cases	Maximum	Minimum	Avertage
World Happiness Report	143	7,74	1,72	5,53
Better Life Index	41	7,6	4,9	6,6
IPSOS Happiness	30	85	48	70,77
Happy Planet Index	146	57,9	13,7	37,27
Legatum Prosperity Index	167	167	1	83,76
World Value Survey	67	97,3	51,9	85,19
World Database of Happiness	158	8,2	3,8	6,27

Comparative analysis and evaluation of national happiness rankings across all datasets

Overall evaluation of major countries

This study analyzed various happiness indices published by seven organizations, including the World Happiness Report, Better Life Index, Happy Planet Index, Legatum Prosperity Index, and IPSOS Happiness, comparing and evaluating differences in national happiness rankings. The analysis revealed significant differences in national happiness rankings depending on the evaluation criteria and emphasized factors of each index. The rankings and characteristics for key countries are detailed as follows:

First, Finland ranked first in the World Happiness Report with a score of 7,741 and also maintained high rankings in the Better Life Index and Legatum Prosperity Index. However, Finland scored moderately (49,8) on the environmentally focused Happy Planet Index. This suggests that Finland excels in economic prosperity and social support (objective indicators) but performs relatively lower on environmental sustainability indicators.

Second, Sweden achieved high rankings in the World Happiness Report (7,344) and Better Life Index (7,3), indicating strong economic stability and high quality of life. Yet, Sweden showed a mid-level score in IPSOS Happiness (68,0) and ranked moderately (55,9) in the environmentally-focused Happy Planet Index, illustrating that assessments of environmental sustainability may differ significantly from economic evaluations.

Third, Korea placed moderately in the World Happiness Report (6,058), lower-middle (5,8) in the Better Life Index, and lower (48,0) in IPSOS Happiness. Korea is positively evaluated on economic indicators but has a notably low ranking in subjective happiness. This disparity suggests significant differences between economic achievement and subjective happiness, potentially explained by long working hours, a highly competitive societal atmosphere, and insufficient attention to individual quality of life and happiness.

Fourth, the United States ranked moderately in the World Happiness Report (6,725) but held higher rankings in the Better Life Index (7,0) and IPSOS Happiness (72,0). However, it ranked low (32,1) on the environmentally-focused Happy Planet Index. This indicates that while the U.S. scores well in economic prosperity, community participation, charity, and social networking, it is negatively assessed in terms of environmental sustainability.

Fifth, Vietnam scored moderately in the World Happiness Report (6,043) and ranked highly on the Happy Planet Index (45,5), reflecting positive evaluations for environmental sustainability and quality of life. However, it scored moderately (95,0) on the economically-oriented Legatum Prosperity Index, indicating relatively lower performance in economic indicators.

The analysis demonstrates significant variations in national happiness rankings due to differences in the evaluation criteria and emphasize elements of each index (e.g., GDP, social support, environmental sustainability). For instance, Finland was top-ranked economically but moderate environmentally, while the United States ranked low in environmental sustainability. These differences highlight the limitations inherent in individual happiness indices, underscoring the necessity for an integrated evaluation system that combines multiple indicators for a more comprehensive and accurate assessment of national happiness. A unified happiness index would improve reliability in international comparisons and be valuable in guiding policy decisions. Developing a multidimensional evaluation model that balances economic performance, subjective happiness, and environmental sustainability is essential for achieving this objective.

Analysis of happiness levels using multidimensional scaling(MDS)

The graph below shows the results of a Multidimensional Scaling (MDS) analysis based on the seven happiness datasets provided. Each point on the graph represents one country, plotted along the X and Y axes. Countries positioned close to each other are interpreted to have similar happiness characteristics. This visualization effectively highlights the relative similarities and differences between countries based on happiness data. Countries located near each other exhibit similar happiness characteristics, whereas countries located further apart indicate greater differences. These results can be used to visually identify relative similarities and differences in national happiness levels and serve as a useful tool for formulating policy improvements.

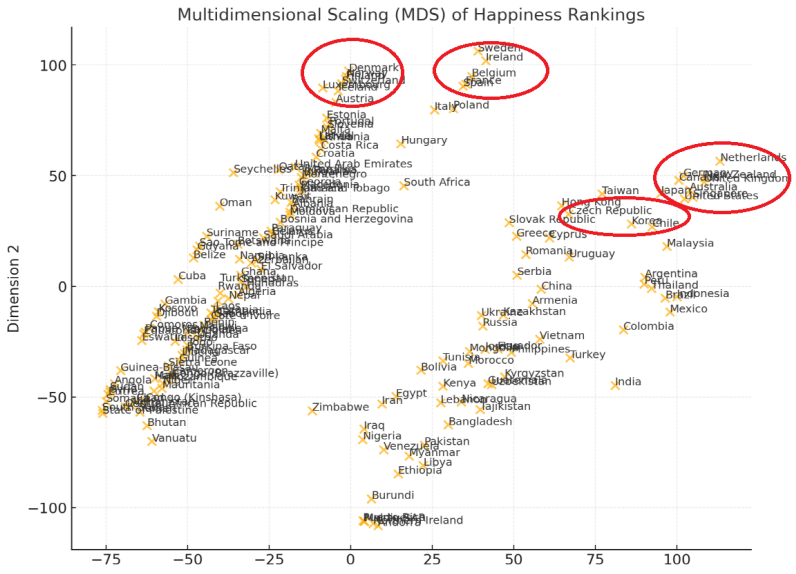

Figure 1. MDS analysis results for all countries
Note: several groups are highlighted separately

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The results of the analysis using Multidimensional Scaling (MDS) visually summarize country rankings based on happiness data, revealing the relative positions and characteristics of major advanced countries. Based on these results, the characteristics of happiness indicators for Korea and major developed countries can be discussed as follows.

First, Korea occupies a central position on both X and Y axes. While it ranks similarly to advanced countries on objective indicators (e.g., GDP, education level), it receives lower ratings for subjective happiness (IPSOS Happiness) and environmental sustainability (Happy Planet Index). This implies that despite economic stability and high educational achievement, there remains room for improvement in life satisfaction and psychological well-being.

Finland and Sweden are positioned near the top on both the X and Y axes, demonstrating overall balanced happiness levels. These countries perform highly across factors such as economic stability, social trust, freedom, and generosity, and also receive relatively positive scores in environmental sustainability. This suggests that Nordic countries fulfill multidimensional happiness criteria comprehensively.

The United States is positioned in the upper right of the X-axis, indicating strong performance in economic prosperity (Legatum Prosperity Index) and objective quality of life (Better Life Index), but it ranks lower in environmental sustainability (Happy Planet Index). This highlights a need for improvement in environmental indicators such as ecological footprints, despite its economic strengths.

Japan occupies a position similar to Korea, receiving high marks for economic stability and quality of life, yet scoring lower on subjective well-being and psychological satisfaction. This illustrates that economic growth does not necessarily correlate with individual happiness.

Finally, Vietnam is positioned slightly above the midpoint towards the upper left, scoring highly on the Happy Planet Index but lower on other indices such as the World Happiness Report. This indicates that Vietnam compensates for its relative economic weaknesses through strengths in environmental sustainability and subjective well-being.

These results emphasize that happiness levels vary significantly according to specific indicators, and economic stability does not necessarily translate into subjective happiness. Particularly, countries like Korea and Japan require cultural and policy changes to improve psychological well-being and life satisfaction despite strong economic outcomes. Additionally, countries like Finland and Sweden, ranking highly across multiple dimensions, demonstrate the importance of balancing various elements of happiness. Thus, integrated analysis using MDS proves effective in systematically identifying national strengths and weaknesses and providing relevant policy implications.

Comparative analysis and evaluation of national happiness rankings among OECD countries

Comparison of Happiness Rankings among Major OECD Countries

This section compares happiness indices among OECD member countries, including Korea, analyzing their distinctive features and underlying causes.

Finland ranked first in the World Happiness Report (7,741) and maintained high rankings in the Better Life Index (7,5) and Legatum Prosperity Index (164), while recording mid-level results in the Happy Planet Index (49,8). Finland's consistently high rankings are attributable to strong social trust, high life satisfaction, and a balanced development model integrating economic prosperity and individual freedom.

Sweden achieved high rankings across all indices, including the World Happiness Report (7,344), Better Life Index (7,3), Happy Planet Index (55,9), and Legatum Prosperity Index (166). Sweden's strong performance is due to its robust social safety nets, welfare system, and emphasis on environmental sustainability inherent in the Nordic social model.

Korea showed moderate rankings in the World Happiness Report (6,058) but ranked lower in the Better Life Index (5,8), IPSOS Happiness (48,0), and Happy Planet Index (38,0), and moderately in the Legatum Prosperity Index (139). Despite Korea's good economic performance, its low rankings result from long working hours, a highly competitive social atmosphere, and low social trust—factors negatively affecting subjective happiness and overall quality of life.

The United States ranked moderately in the World Happiness Report (6,725) but scored highly in the Better Life Index (7,0), IPSOS Happiness (72,0), and Legatum Prosperity Index (149). However, it scored poorly in the Happy Planet Index (32,1). The U.S. excels in economic prosperity and individual freedom indicators, but it struggles significantly with environmental sustainability.

France maintained mid-level rankings in the World Happiness Report (6,609), Better Life Index (6,7), and Legatum Prosperity Index (145), yet scored highly in IPSOS Happiness (71,0) and Happy Planet Index (52,0). France is positively evaluated due to its balanced approach toward economic stability and social welfare, effectively enhancing quality of life and psychological well-being.

The analysis shows substantial variation among OECD countries in happiness rankings depending on each country's social environment, economic performance, and environmental sustainability. Countries exhibiting

significant gaps between economic performance and subjective well-being particularly require policy efforts to improve social systems and cultural environments. Therefore, developing an integrated multidimensional happiness index incorporating diverse evaluation elements will enhance reliability in international comparisons and serve as a valuable tool in policymaking

Results of Multidimensional Scaling (MDS) analysis

The graph below visualizes seven happiness indicators for OECD countries using Multidimensional Scaling (MDS). Each point represents one OECD country, and the X-axis and Y-axis represent dimensions that condense multidimensional happiness data into a two-dimensional space.

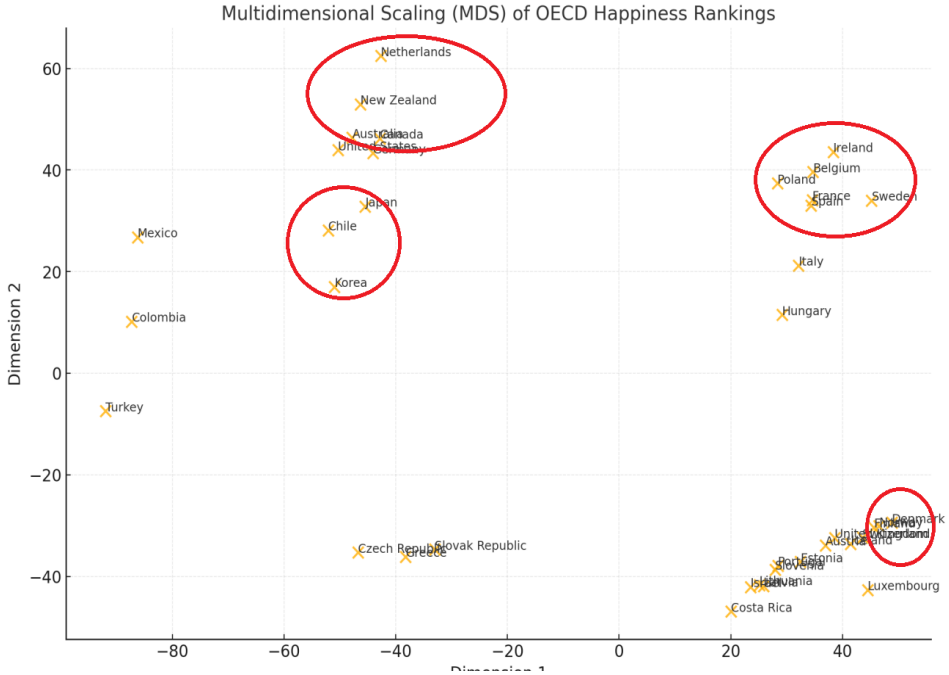

Figure 2. Results of MDS analysis for OECD countries

The analysis of OECD countries' happiness indicators using Multidimensional Scaling (MDS) has identified distinctive characteristics of major countries, including Korea and Japan, as follows.

First, Korea is positioned in the middle-lower area of the graph. It scores highly on economic indicators (e.g., GDP, education, welfare) but receives low evaluations in subjective well-being (IPSOS Happiness) and environmental sustainability (Happy Planet Index). This is likely influenced by long working hours and a highly competitive culture, negatively affecting individuals' life satisfaction. Therefore, Korea requires policy efforts aimed at enhancing psychological happiness beyond economic stability.

Japan occupies a similar position to Korea. Despite its high level of economic development, Japan scores poorly in subjective well-being and social trust. High living costs and social stress are identified as major contributing factors. Thus, policies promoting psychological stability and social connectivity are also necessary for Japan.

Conversely, Finland is located in the upper-right area of the graph, scoring highly across both objective and subjective indicators. The combination of strong social safety nets and environmental sustainability places Finland consistently high across all happiness measures, illustrating a balanced development model. Similarly, Sweden occupies a comparable position to Finland, maintaining high happiness levels through the harmony of its welfare system and environmental protections.

The United States is positioned centrally on the right side of the graph, achieving high scores in economic prosperity and personal freedom indicators but lower scores in environmental sustainability. This highlights the need for a balance between economic performance and ecological sustainability.

Mexico is located centrally on the left side of the graph, scoring highly in subjective well-being and environmental sustainability but performing poorly in economic indicators. Mexico's results suggest the need to maintain its strengths in environmental sustainability while pursuing economic growth.

These findings emphasize that happiness levels should not be evaluated solely by economic factors but through comprehensive assessments involving subjective well-being and environmental sustainability. Notably, Korea and Japan, despite their economic stability, exhibit low subjective well-being, necessitating policy approaches to enhance psychological stability and social trust. On the other hand, Finland and Sweden provide balanced

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outcomes across various happiness indicators, serving as exemplary models for other nations. Consequently, national happiness policies should leverage these multidimensional analytical findings to address weaknesses, build on strengths, and enhance citizens' quality of life through a balanced approach.

Developing an integrated happiness index

Necessity

Since the seven happiness-related indicators for OECD member countries have different scoring scales and evaluation criteria, developing an integrated comprehensive happiness index (integrated index) is essential for enabling cross-country comparisons and deriving relevant policy implications. The integrated index is important for the following reasons:

- First, enhanced comparability: standardizing indicators with varying units and evaluation methods ensures fair and effective comparisons among countries.
- Second, policy prioritization: by comprehensively identifying strengths and weaknesses across various indicators, the index facilitates targeted policy directions for individual countries.
- Third, necessity for multidimensional assessment: by incorporating economic, social, environmental, and psychological factors comprehensively, the integrated index provides a more complete understanding of happiness levels within each country.

Procedures

The procedure for developing the integrated index involves the following steps:

- First, calculate the national rankings for each indicator using their respective values.
- Next, normalize these rankings into a uniform scale.
- Subsequently, assign weights based on the relative importance of each indicator.
- Lastly, aggregate these weighted normalized scores into a comprehensive index. While various weighting methods exist, this study adopts Spearman's rank correlation coefficient as a method for determining the weights.

Calculation of integrated index

Preparation and normalization of the OECD dataset

Scores from each indicator will be converted into a standardized range. The normalization formula is as follows:

Normalized Score:

$$X' = \frac{X - X_{\min}}{X_{\max} - X_{\min}}$$

This transforms all indicators into a common scale ranging from 0 to 1, enabling effective aggregation and comparison.

Preparation and normalization of the OECD dataset

The Rank Consistency Average measures how consistently one indicator (or variable) maintains its ranking relative to other indicators. It is commonly computed based on differences in ranks between various indicators, helping determine the relative importance of each indicator through mutual comparisons.

The formula is given as:

$$r_{j,k} = 1 - \frac{\sum_{i=1}^{n} |d_i|}{n}$$

Where:

rj,k is the rank consistency between indicators j and k.

di represents the rank difference for the same data point between indicators j and k.

n is the total number of data points.

The Rank Consistency Average is calculated as the average of rj,k values between a specific indicator and all other indicators.

$$R_j = \frac{\sum_{k \neq j} r_{j,k}}{m - 1}$$

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Rj: Average rank consistency of indicator j.
m: Total number of indicators.

Calculation of integrated index

$$\text{Integrated Index}_j = \sum_{i=1}^{7} (w_i \cdot \text{Normalized Indicator Value}_{ij})$$

Where:
j: Country
i: Indicator
wi: Weight derived from the rank consistency average

Normalized Indicator Value: Normalized value of indicator I for country j.

Rank consistency scores among indicators

The table below shows that among various datasets, the World Happiness Report has the highest rank consistency, indicating strong alignment with other reports and thus a higher weighting. It is followed by the OECD's Better Life Index.

Table 5. Rank consistency scores for each dataset

Indicator	Rank Consistency Average(r_s)
World Happiness Report (2021-2023)	0,47
Better Life Index (2024)	0,46
IPSOS Happiness (2024, %)	0,19
Happy Planet (2021)	0,11
Legatum (2023)	0,41
World Value Survey (2017-2022, %)	0,05
World Database (2010-2019)	0,39

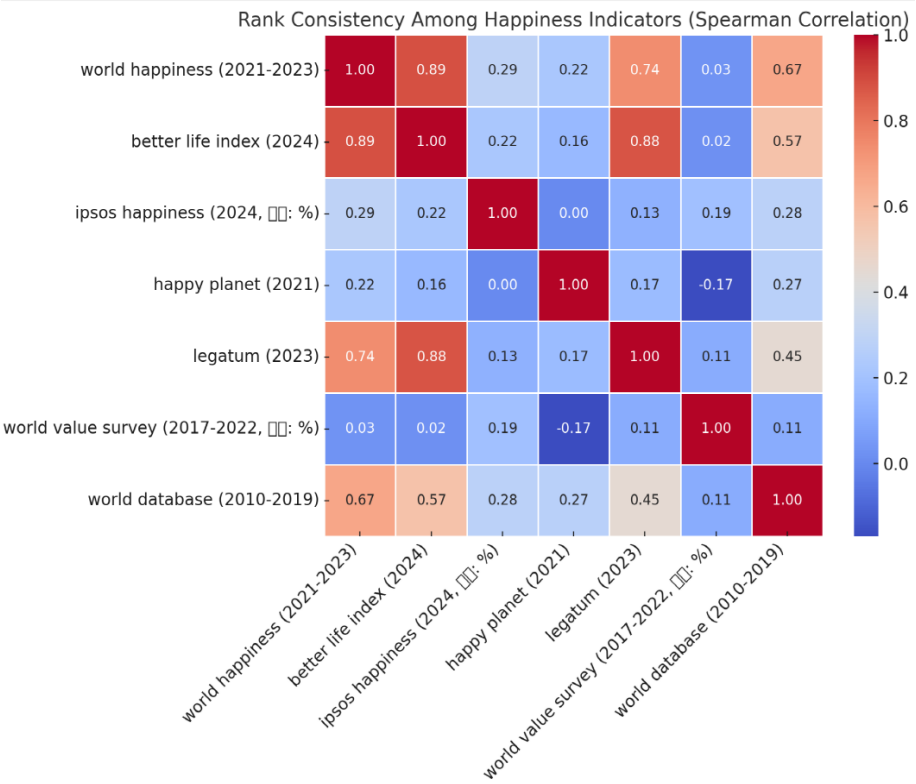

Figure 3. Spearman's rank correlation analysis

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Additionally, the degree of correlation among different datasets can be visualized using Spearman's correlation, as illustrated in the figure below. This figure also reflects the previously calculated Rank Consistency Average values.

Results of the integrated happiness index by country

The calculated integrated index scores by country are presented below. Denmark has the highest score, followed by Finland, while Korea is ranked 35th among the 38 countries.

Table 6. Country scores based on the integrated happiness index

Country	Integrated Index
Denmark	1,03
Finland	1,03
Sweden	0,99
Iceland	0,99
Norway	0,96
Switzerland	0,95
Netherlands	0,92
Luxembourg	0,90
Austria	0,87
Israel	0,87
New Zealand	0,83
United Kingdom	0,82
Belgium	0,82
Germany	0,47
Canada	0,46
Australia	0,19
France	0,11
Slovenia	0,41
Germany	0,05
Canada	0,39
Australia	0,78
France	0,77
Slovenia	0,74
Costa Rica	0,74
Spain	0,73
Czech Republic	0,72
Italy	0,70
Ireland	0,70
Estonia	0,70
Lithuania	0,69
United States	0,68
Poland	0,64
Latvia	0,62
Slovak Republic	0,60
Chile	0,59
Portugal	0,58
Japan	0,56
Hungary	0,55
Mexico	0,52
Korea	0,49
Greece	0,46
Colombia	0,36
Turkey	0,11

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Relationship between GDP per capita and Integrated Happiness Index

It is also meaningful to examine the relationship between GDP per capita and the integrated happiness index. GDP per capita is a representative indicator of a country's economic prosperity. Generally, higher GDP suggests greater availability of resources for individuals and society, potentially leading to increased happiness. However, happiness cannot be explained solely by material wealth. Analyzing this relationship allows for a quantitative understanding of the link between economic prosperity and psychological and social satisfaction.

Moreover, many studies highlight the tendency known as the Easterlin Paradox, where happiness growth slows down beyond a certain level of GDP per capita. This suggests that once basic needs (housing, food, health) are satisfied, additional economic wealth may have a limited impact on overall happiness. This analysis implies that economic growth alone cannot continuously increase the happiness of citizens. Therefore, examining the relationship between GDP per capita and the integrated happiness index is significant.

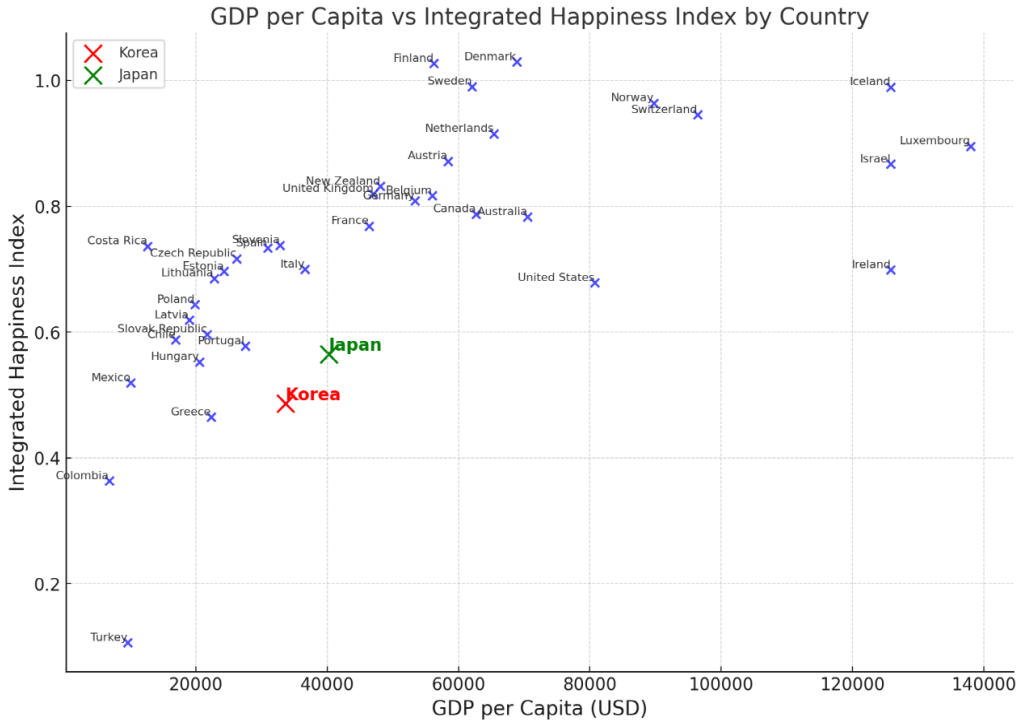

Figure 4. Relationship between the integrated happiness index and GDP per capita

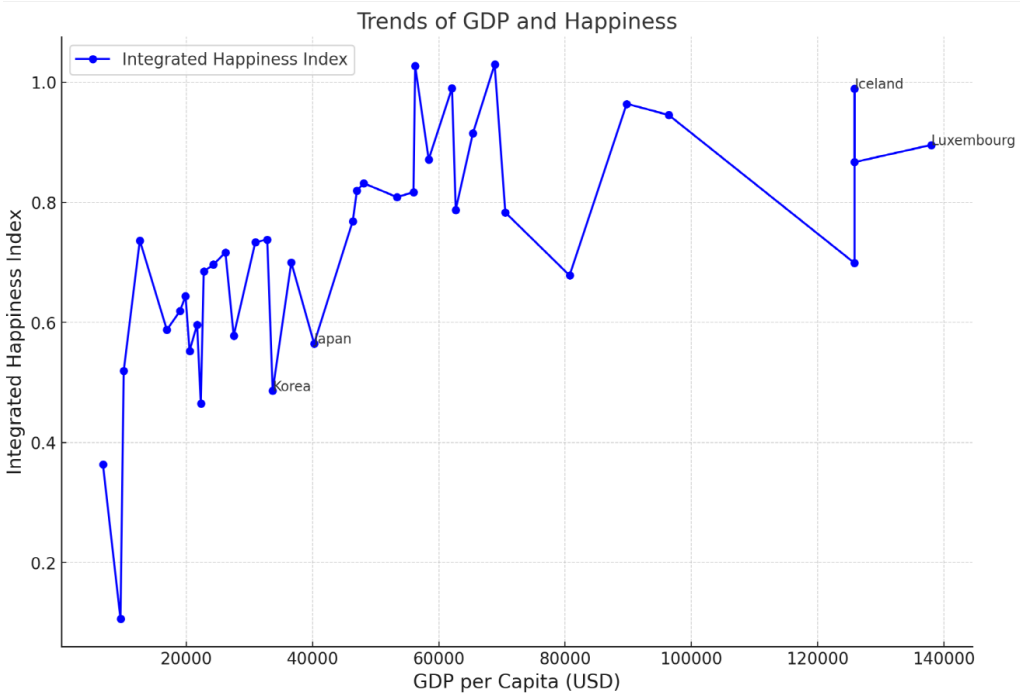

Figure 5. Trend of integrated happiness scores and GDP per capita

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The two graphs presented above visualize the integrated happiness scores of countries sorted by GDP per capita, demonstrating trends between GDP and happiness scores. The key characteristics can be summarized as follows:

First, there is a general tendency for happiness scores to increase as GDP rises. Countries like Iceland and Luxembourg exhibit both high GDP and high happiness scores. Conversely, Korea and Japan display relatively lower happiness scores, highlighting that economic growth does not necessarily translate directly into higher happiness levels. Overall, economic prosperity generally correlates with factors contributing to happiness, such as improved education, healthcare, and welfare systems.

The following graph illustrates a positive correlation between GDP per capita and happiness scores, but also identifies a distinct threshold effect. As shown in the graph, countries with higher GDP per capita tend to have higher integrated happiness scores. However, beyond a certain GDP per capita threshold (e.g., Nordic countries), additional economic growth provides a limited incremental benefit, resulting in a saturation phenomenon. This suggests that factors beyond economic prosperity, such as social trust, environmental quality, and the quality of public services, significantly influence overall happiness.

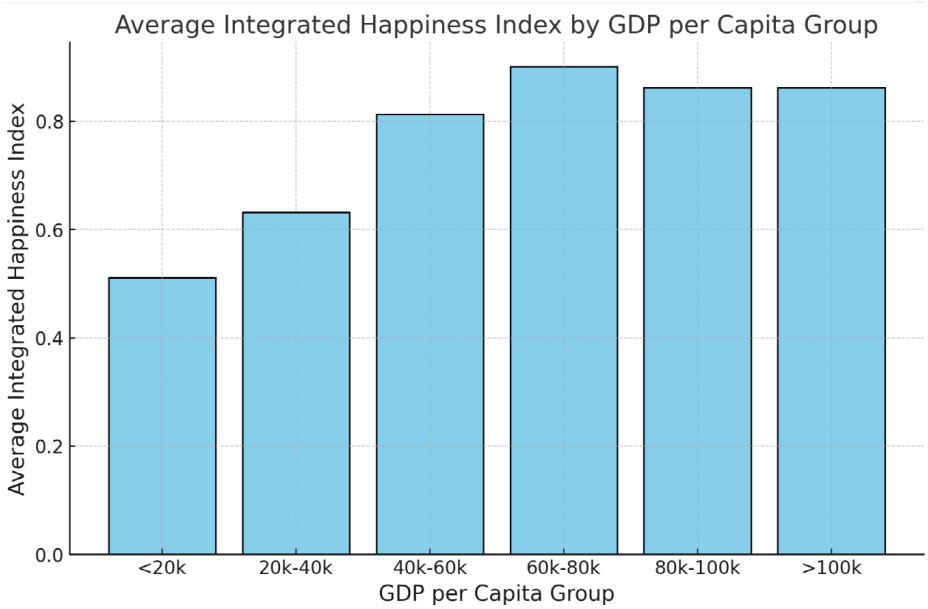

Figure 6. Happiness scores and the threshold effect

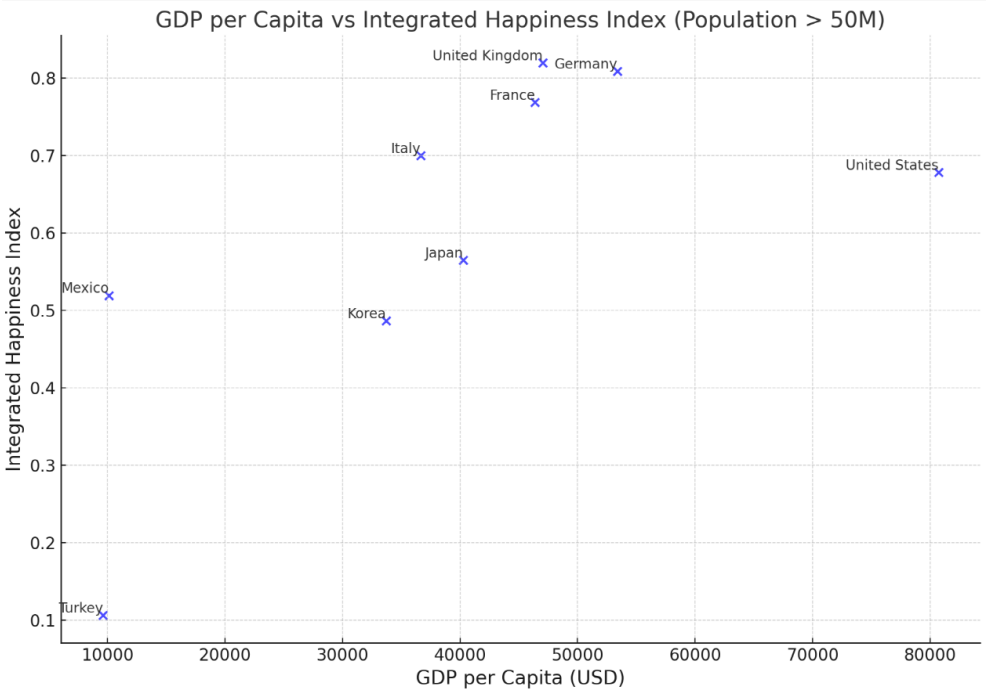

Figure 7. GDP per capita and happiness index for countries with populations exceeding 50 million

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On the other hand, countries with smaller populations typically have relatively simpler social, economic, and political structures. Relationships among residents tend to be closer, fostering stronger community ties. Due to smaller populations, governments can implement policies more effectively, ensuring that the impact of these policies is directly experienced by residents. Additionally, income distribution is likely to be more equitable, resulting in lower social dissatisfaction and potentially higher happiness scores.

Conversely, countries with larger populations often possess more complex structures and face diverse challenges. Income distribution tends to become more unequal, significantly diminishing overall happiness. Furthermore, larger populations bring increased ethnic, religious, and cultural diversity, potentially weakening social cohesion and fostering conflict. Additionally, large-scale urbanization commonly leads to issues in transportation, housing, and environmental pollution, negatively impacting individual happiness. Thus, it is meaningful to differentiate countries based on population size.

Below is a graph illustrating the relationship between GDP per capita and happiness scores specifically for OECD countries with populations exceeding 50 million.

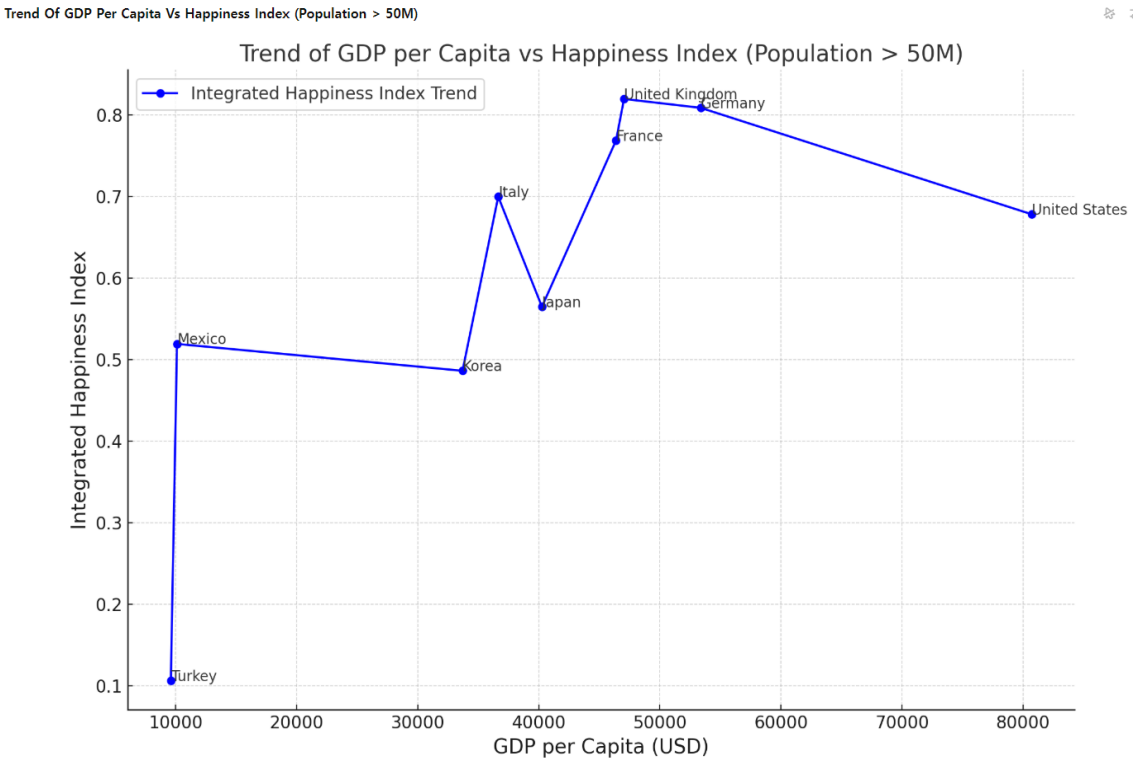

Figure 8. Trends of GDP per capita and happiness index for countries with populations exceeding 50 million

From the two graphs presented above, although limited by the small number of cases, it is clear that even among OECD countries with populations exceeding 50 million, integrated happiness indices generally tend to rise as GDP per capita increases. This trend suggests that economic development can enhance basic living standards and welfare. However, Korea and Japan demonstrate somewhat different patterns. In Korea, despite relatively high GDP per capita, the integrated happiness index remains lower compared to countries with similar GDP levels (e.g., Germany, France). This implies that non-economic factors such as long working hours and weak social cohesion negatively impact happiness. Similarly, Japan exhibits high GDP per capita but a lower happiness score than the linear growth trend would suggest, indicating potential influences of an aging population and excessively competitive culture.

On the other hand, in the cases of Mexico and Turkey, although GDP per capita is relatively low, happiness scores are not correspondingly low. This might reflect how strong community ties and family-centered social structures potentially offset economic limitations. The United States maintains high happiness scores alongside high GDP per capita, indicating that economic prosperity combined with freedom, diversity of choices, and individual-oriented social values positively influence happiness levels.

CONCLUSIONS

This study aimed to develop an integrated happiness index by synthesizing various international happiness indicators, evaluate Korea's happiness level within OECD countries, and suggest policy directions accordingly. The key conclusions derived from addressing the main research questions are as follows:

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First, international happiness indicators measure diverse economic, social, environmental, and subjective factors, such as income relative to GDP, social support, life expectancy, freedom, generosity, and perceptions of corruption. These indicators utilize different evaluation criteria and methodologies, resulting in significant variations in country rankings.

Second, the analysis of happiness levels among OECD countries revealed that Nordic countries demonstrate consistently high happiness levels due to balanced performance across economic prosperity, social trust, and environmental sustainability. Conversely, some countries like Korea and Japan received lower evaluations in psychological well-being and life satisfaction, despite strong economic performance.

Third, the integrated happiness index developed through a multidimensional approach enabled a more comprehensive and objective cross-national comparison of happiness levels by incorporating economic indicators along with social trust and environmental sustainability. According to this integrated index, Korea ranked 35th out of 38 OECD countries, indicating a notably low level of happiness.

Fourth, a positive correlation was observed between the integrated happiness index and GDP per capita. However, a saturation effect was found at GDP levels above approximately $60,000 per capita, where further economic growth has diminishing returns on enhancing happiness.

Fifth, since Korea has not yet reached this GDP threshold for diminishing returns, continued economic growth remains necessary in the short term. Nevertheless, policy efforts focusing on non-economic factors such as mental health support and strengthening social cohesion are equally important.

In conclusion, enhancing happiness in Korea requires a multidimensional and balanced policy approach that combines GDP growth with measures to improve psychological well-being, social trust, and environmental sustainability.

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BIBLIOGRAPHIC REFERENCES

1. Busseri M. A. & Sadava S. W. 2021. Subjective well-being as a dynamic and agentic system. Annual Review of Psychology, 72(1): 239–265. https://doi.org/10.1146/annurev-psych-060220-122556.

2. Choi Y.-C. 2004. An analysis of the impact of social policy factors on national happiness and national competitiveness. Journal of Social Policy Studies.

3. Choi Y.-C. & Baek J.-S. 2003. A policy approach to enhancing happiness: Focusing on Jeju Special Self-Governing Province. Korean Journal of Local Autonomy Administration.

4. Clark A. E., Flèche S., Layard R. & et al. 2020. The origins of happiness: The science of well-being over the life course. Princeton University Press.

5. Diener E., Lucas R. E. & Oishi S. 2020. Advances and open questions in the science of subjective well-being. Collabra: Psychology, 6(1): Article 15. https://doi.org/10.1525/collabra.115.

6. Helliwell J. F., Huang H., Wang S. & et al. 2021. World happiness report 2021. Sustainable Development Solutions Network.

7. Heo J. H. 2022. Key findings from the 2021 Korean Happiness Survey. National Future Strategy Insight, (38): 1–12.

8. Ki Y.-H., Kim Y.-J. & Kim N.-S. 2013. Deriving key indicators of community well-being. Korean Journal of Community Studies.

9. Kim S. A., Roh H. J., Ahn S. R. & et al. 2022. Basic research for analysis of social policy performance and trends. Korea Institute for Health and Social Affairs.

10. Kwak N. P. 2022. Koreans' happiness levels drop for three consecutive years. The Hankyoreh. Available online: https://www.hani.co.kr/arti/science/future/1073871.html.

11. Lamers S. M. A., Westerhof G. J., Glas C. A. W. & et al. 2022. Longitudinal evaluation of the mental health continuum-short form (MHC-SF): Measurement invariance, responsiveness, and predictive validity of positive mental health. Assessment, 29(4): 625–637. https://doi.org/10.1177/10731911211051370.

12. Layard R. & Ward G. 2020. Can we be happier? Evidence and ethics. Centre for Economic Performance Occasional Paper No. 49. Available online: https://cep.lse.ac.uk/pubs/download/occasional/op049.pdf.

13. Lee M. A. & Choi K. S. 2021. The effects of social capital and subjective health on life satisfaction in rural residents: Evidence from Korea. International Journal of Environmental Research and Public Health, 18(14): Article 7479. https://doi.org/10.3390/ijerph18147479.

14. Lee S.-J. 2012. A study on the impact of social class on happiness. Seoul National University Journal of Social Sciences.

15. Lee S.-J. & Ki Y.-H. 2014. The relationship between local administrative services and the components of community well-being: Focusing on the six capital factors of Kee's model. Korean Public Administration Review.

16. Lee S.-J., Ki Y.-H., Kim Y.-J. & et al. 2013. Analysis of the conceptual structure and measurement indicators of community well-being. Korean Institute of Public Administration Report.

17. Lee T. S. 2022. Comparative analysis of happiness indices in four Northeast Asian countries. Korea Institute for Health and Social Affairs.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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Writing - proofreading and editing: Young-Chool Choi, Yun Na Jeong.