

# A SPATIAL ANALYSIS OF HAPPINESS

Neşe ARAL<sup>1</sup>  
Hasan BAKIR<sup>2</sup>

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## Abstract

In this study, the differences in the spatial pattern of happiness will be revealed and the distribution of the relationship between happiness and economic variables between countries will be discussed. When the distribution pattern is examined, it can be observed that happy and unhappy countries are concentrated in certain areas. Therefore, the concept of happiness has been evaluated from a geographical point of view. From the analysis of 147 countries in this study, it was found that economic freedom and GDP have a positive effect on happiness whereas inflation and unemployment have a negative effect. A striking result was that in addition to the relevant economic variables, location is also effective in the interpretation of happiness. One of the significant results of the study was that geography is a factor to consider in investigating the relationship between economic variables and happiness.

**Keywords:** Happiness, Economic freedom, Spatial analysis.

**JEL:** C21

## 1. Introduction

Happiness is one of the main issues that has been discussed in Western thought for a long time. At this point, it is possible to examine this discussion by dividing it into three periods. These are, Antique Greek philosophy, Western European moral philosophy after the Enlightenment, especially post-Enlightenment West European moral philosophy that is called utilitarianism, and lastly, ongoing happiness research of our day (Ruut Veenhoven, 1991).

The question of what happiness is for man is one of the basic problems to which classical philosophy seeks an answer. In this context, Aristotle, like Socrates and Plato, suggested that the ultimate goal of people is “eudaimonia” or “self-happiness”. While Aristotle stated that happiness is determined by reasonable virtuous activities, he was strongly opposed to hedonism in this context (Ahmet Cevizci, 2010).

Throughout the Middle Ages, it was believed that happiness could not be achieved in worldly life and that the basis of morality was the word of God. In other words, during this period it was believed that happiness could only be experienced in heaven. With the Enlightenment, these views became open to debate and it was accepted that happiness was achievable and morality was a human product. Therefore, it was argued that it was possible to experience happiness in this world and that people would achieve more happiness thanks to their reasoning skills (Ruut Veenhoven, 2010; Ruut

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<sup>1</sup> Department of Econometrics, Faculty of Economics and Administrative Sciences, Bursa Uludag University, Turkey. [nese.aral@uludag.edu.tr](mailto:nese.aral@uludag.edu.tr)

<sup>2</sup> Department of International Trade, Bursa Uludag University, Turkey. [hasanbakir@uludag.edu.tr](mailto:hasanbakir@uludag.edu.tr)

Veenhoven and Devrim Dumludağ, 2015). In his work entitled "Introduction to Morals and Legislation," Jeremy Bentham (1781) advocated the evaluation of the morality of actions based on their effect on the happiness of mankind, and accordingly, defined happiness as the sum of pleasures and pains (Bentham, 1781; Veenhoven, 2010; Jan Ott, 2010a). The Bentham philosophy, which defines happiness through psychological effects, is defined as utilitarianism, because Bentham's emphasis is on the benefits of behavioral consequences (Bentham, 1781; Veenhoven, 2010). Mill also tried to determine what the purpose of human life was in reality, in order to ground the principle of utilitarianism, which he thought was left unfounded in Bentham. His view was that the purpose of life was "summum bonum," that is, happiness. Happiness in Mill is identical to pleasure, and unhappiness is identical to pain (Cevizci, 2010).

The debate on what determines happiness has continued from the past to the present. The last fifty years have seen important developments in the research into happiness with the contribution of different disciplines, the most important of which are psychology, sociology, political science, and economics.

## **2. Literature Review**

Since there are various meanings of happiness, many authors have used different concepts instead of the concept of happiness (Ed Diener, 1994). When used in a broad sense, the word happiness means the same as a high-quality life and well-being (Veenhoven, 2010). For example, Diener (1994) stated that subjective well-being is used similarly to happiness. Richard A. Easterlin (2001) also used the concepts of happiness, subjective well-being, satisfaction, utility, well-being, and welfare interchangeably (Easterlin, 2001; Adi Cilik Pierewan and Gindo Tampubolon, 2014).

Happiness is undoubtedly one of the main goals that every person wants to achieve throughout his life. In this regard, the determinants of happiness have been discussed for many years. In this context, it is possible to follow various variables affecting happiness in the relevant literature. For example, there are various studies examining the effects of both economic, social, and psychological factors on happiness (Ruut Veenhoven, 2000; Daniel M. Gropper, Robert A. Lawson and Jere T. Thorne Jr, 2011) such as economic development (Betsey Stevenson and Justin Wolfers, 2008; Indranil Dutta and James Foster, 2013; Daniel L. Bennet and Boris Nikolaev, 2017), income (Kazım Anıl Eren and Ahmet Atıl Aşıcı, 2017), perceived trust and perceived income (Meltem Ucal and Simge Günay, 2019), family (Michael R. Hagerty and Ruut Veenhoven, 2003), health (Amado Peiró, 2006), friendship (Felix Requena, 1995), and faith (Ayse Y. Evrensel, 2015). In this context, raising the happiness levels of individuals is one of the main objectives of the economy (Ariel R. Belasen and Roger W. Hafer, 2013). Accordingly, the relationship between income and happiness is among the important issues that economists have focussed on in recent years. The approach that an increase in income would increase happiness was criticized by Richard Easterlin in a 1974 study which showed that the average level of happiness remained the same, although income doubled in the United States from World War II to the mid-1970s. Referred to as the "Easterlin Paradox", this resulted in a revision of the prosperity policies that highlight growth (Richard A. Easterlin, 1974; 1995).

Easterlin (1995) also reached similar conclusions in his analysis of Japan. He stated that despite the economic boom between 1958-1987 with Japan reaching the level of developed countries, there was no improvement in average happiness. Ruut Veenhoven (1993) revealed in his analysis that people in poor countries are more unhappy. This was also demonstrated by Easterlin's data. He stated that post-war economic development in Western Europe was in line with the rise in happiness, and therefore, there is a strong relationship between income and happiness, although it may occur simultaneously or be delayed (Ruut Veenhoven, 1989). In the following period, Hagerty and Veenhoven (2003) expanded their analysis by reviewing more countries and observed a strong relationship between economic growth and happiness. With this observation, the effect of the increase in national income on happiness was determined to be greater in the short term than in the long term. In that analysis of 21 countries, it was also stated that the relationship between income and happiness is positive and that Japan's situation is an exception. Michael R. Hagerty and Ruut Veenhoven (2006) interpreted the available data as Easterlin seeing the glass as half empty, whereas they saw it as half full (Veenhoven and Hagerty, 2006; Veenhoven and Dumludağ, 2015). In contrast, Eren and Aşıcı, stated that per capita income does not accurately explain the level of welfare of Turkish citizens, as although the per capita income doubled in the period 2004-2014, the happiness index did not make the same progress (Eren and Aşıcı, 2017; Kazım Anıl Eren and Ahmet Atıl Aşıcı, 2018).

These approaches demonstrate that the relationship between income and happiness should be examined in more detail, because it has been observed that an increase in income level does not contribute to an increase in happiness after a certain level. This indicates that there are variables that are more important or at least as important as income in increasing happiness. It has been suggested that factors such as friendship and good family life will increase happiness as well as factors such as income comparisons, expectations and adaptation (Bruno S. Frey and Alois Stutzer, 2002; Richard Layard, 2005; Daniel Nettle, 2005; Veenhoven and Dumludağ, 2015).

Bruno S. Frey and Alois Stutzer (2000) stated that although an increase in income level increases happiness, this increase remains at a very low level. In this context, they claimed that in addition to demographic and economic conditions, democracy also has a systematic and highly significant impact. It has also been emphasised that the economic factor of unemployment reduces happiness (Andrew E. Clark and Andrew J. Oswald, 1994; Andrew J. Oswald, 1997; Frey and Stutzer, 2000; Rafael DiTella and Robert MacCulloch, 2006). However, Clark and Oswald (1994) stated that the unhappiness caused by unemployment is less in settlements with high unemployment rates and young people. They also highlighted that people who have been unemployed for a long time are happier compared to those who have recently become unemployed. Di Tella and MacCulloch (2006) stated that both unemployment and inflation reduce happiness, whereas in contrast to other studies, Peiró (2006) stated that unemployment is not related to happiness.

Another important determinant of happiness is marriage. It has been determined that being married affects happiness positively (Clark and Oswald, 1994; Requena, 1995; Oswald, 1997; Steven Stack and J. Ross Eshleman, 1998; Frey and Stutzer, 2000; Peiró, 2006; Eren and Aşıcı, 2017). In addition, socio-demographic variables such as

living conditions, friendship, personal security, freedom, being religious or belonging to different cultures also affect happiness. For example, there is a positive relationship between wellness and happiness (Veenhoven, 1991; Peiró, 2006). There is also a positive relationship between housing and happiness (John D. Healy, 2003; David Clapham, 2010). This relationship has been observed more clearly especially in older people. A strong and positive relationship between friendship and happiness (Requena, 1995) has also been revealed. There are also studies in literature that reveal a similar relationship between personal security and happiness. Alex C. Michalos and Bruno D. Zumbo (2000) showed that a decrease in the crime rate increases the quality of life but has a very low effect on happiness. The effect of religion on happiness has also been analyzed and religious belief has been shown to have a positive effect on happiness (Frey and Stutzer, 2002; Lasse Steiner, Lisa Leinert, and Bruno S. Frey, 2010; Filipe Campante and David Yanagizawa-Drott, 2015; Eren and Aşıcı, 2017).

Alex Inkeles (1994) stated that a high happiness level in developed countries may stem from a cultural base or from differences in social capital. Therefore, it has been underlined that economic development alone may not increase the happiness of a country among developing countries (Hagerty and Veenhoven, 2003). Again, Frey and Stutzer (2000) associated the rise in happiness with the development of democracy. It has been stated that citizens will be happier as democracy develops. Schyns (1998) approached the issue in terms of women's liberation (Hagerty and Veenhoven, 2003). In addition to this relationship, public expenditure (Rati Ram, 2009; Kamal Kasmaoui and Bourhaba Othmane, 2017), welfare state policies (Kelsehy J. O'Connor, 2017), friendship (Melikşah Demir and Metin Özdemir, 2010), leisure time (Jeroen Nawijn and Ruut Veenhoven, 2013) and education (Juncal Cuñado and Fernando Pérez De Gracia, 2012) have been stated to increase happiness (Hagerty and Veenhoven, 2003).

The technical quality of administrations has been reported to have an important effect on happiness. This is said to be possible only through the continuation of the democratic tradition, the increased efficiency of the administration, the quality of regulation, law, and the prevention of corruption (Ott, 2010a). In other words, provided that governments ensure security, health, social equality, and justice, they can positively affect happiness. Therefore, it has been stated that increasing the quality of governance will have a positive effect on happiness (Jan Ott, 2010b).

Again, it is possible to find studies on different economic variables affecting happiness in the literature. For example, Alberto Alesina, Rafael Di Tella and Robert MacCulloch (2004) and Shigehiro Oishi, Selin Kesebir and Ed Diener (2011) stated that inequalities of income distribution affect happiness. However, in some studies (Clifford Cobb, Ted Halstead, and Jonathan Rowe 1995) it was stated that economic growth would reduce happiness due to negativity caused by pollution, traffic and stress (Hagerty and Veenhoven 2003; Berry K. Björkman, 2018).

Many studies have expanded the scope of analyses and have examined the relationship between economic freedom and happiness. In this context, the development of institutions that could increase economic freedom and how economic freedom will affect the level of happiness has been the subject of research (Belasen and Hafer, 2013). Early studies found a positive relationship between economic freedom and happiness (Veenhoven, 2000; Tomi Ovaska and Ryo Takashima 2006; Gropper, Lawson, and

Thorne Jr., 2011; Belasen and Haffer, 2013; Feremy Jackson, 2017; Bennett and Nikolaev, 2017). In recent studies, it has been determined that the relationship between freedom and happiness differs in rich and poor countries (Christian Bjørnskov, Axel Dreher, and Justina a. V. Fischer, 2008).

The debate on the relationship between freedom and happiness has occupied an important place in the literature. Another important point that attracts attention in the studies conducted is the association of freedom with economic freedom, and there is extensive literature that has measured both economic freedom and human happiness (Veenhoven, 2000; Gropper, Lawson, and Thorne Jr., 2011). For a long time, the relationship between economic freedom and happiness could not be empirically tested due to measurement problems. However, these measurement problems have been solved in recent years and related data have been obtained (Veenhoven, 2000).

Veenhoven (2000) examined the relationship between freedom and happiness by examining 46 countries with data available on freedom and happiness in the early 1990s. The analysis revealed a positive relationship between freedom and happiness. Ovaska and Takashima (2006) also underlined the existence of a positive relationship between economic freedom and happiness. In their analysis of more than 100 countries, Gropper, Lawson, and Thorne Jr. (2011) found a positive relationship between happiness and economic freedom at the national level. They also underlined that the gross domestic product per capita has a strong and positive effect on happiness. In this context, it has been said that free people generally lead richer, longer and happier lives. In an analysis of the USA, Jackson (2017) indicated that economic freedom has a positive effect on happiness, and determined that economic freedom had a positive effect on both individual happiness and a country's average happiness.

In addition to these findings, one of the most criticized topics in the literature is that spatial effects have been overlooked. Although the differences between countries have been emphasized, the related studies have ignored the spatial effect. The happiness of a certain country depends not only on the factors in its own country but also on the factors of others. Therefore, excluding spatial effects from the analysis will lead to incomplete and incorrect results (Adamk Okulicz-Kozaryn, 2011; Chun-Hung A. Lin, Suchandra Lahiri, and Ching-Po. Hsu, 2014). Various studies have evaluated happiness and its geographical dimension. In these studies (John F. Helliwell and Christopher P. Barrington Leigh, 2010; M. Grazia Pittau Zelli Roberto, and Andrew Gelman, 2010; Aqib Aslam and Luisa Corrado, 2012; Dimitris Ballas and Mark Tranmer, 2012; Finbarr Brereton, J. Peter Clinch, and Susana Ferreira, 2008; Okulicz-Kozaryn, 2011; Andrew J. Oswald and Stephen Wu, 2010; Luca Stanca, 2010; Pierewan and Tampubolon, 2014), the geographical distribution of happiness was investigated and the results showed that geography had an impact on happiness (Pierewan and Tampubolon, 2014; Björkman, 2018). In this context, Lin, Lahiri, and Hsu (2014) continued their studies by grouping countries and examined the spillover effects of a country's happiness on neighboring countries using the spatial econometric technique. It was concluded that this distribution effect was high among homogeneous groups and it had a positive effect in developed countries. Helliwell and Barrington-Leigh (2010) showed that the difference between happiness levels of countries was ten times higher than the difference between provinces, therefore the income-happiness relationship was strong-

positive between countries, whereas it showed a weak-negative relationship between provinces. In other words, different results have been revealed at different levels (Helliwell and Barrington-Leigh, 2010). As highlighted by Robert D. Putnam, Robert Leonardi, and Raffaella Y. Nonetti (1993), there are prosperous and high levels of civic engagement in provinces in Northern Italy, whereas, in Southern European provinces, wealth levels and participation rates are lower. Considering the effect of these variables on happiness, it can be concluded that different regions have different levels of happiness. Therefore, these developments are important in terms of showing the spatial dependence of happiness (Okulicz-Kozaryn, 2011). Okulicz-Kozaryn (2011) revealed that European regions are clustered in terms of happiness, and a positive spatial correlation was shown between European regions in terms of happiness. This finding means that happiness in one province is related to happiness in another province, happiness in one region to happiness in another region, or happiness in one country to happiness in another country. Therefore, as stated by Waldo R. Tobler (1970): "Everything is related to everything else, but close things are more related than distant things." The mechanism of social comparison, that is, people comparing themselves with other people in the neighboring space is the basis of this spatial correlation. Therefore, the determinants of happiness in a place are similar to the determinants of happiness in a neighboring place. Thus, the convergence of happy and unhappy regions at a spatial level, i.e., spatial correlation emerges (Putnam, Leonardi, and Nonetti, 1993; Okulicz-Kozaryn, 2011). Therefore, the question of "what is the effect of spatial dependence on happiness?" is important at this point.

Whereas in earlier studies, the relationship between economic variables and happiness was limited to the analysis of countries, this study also takes spatial correlation into account in the analysis conducted between countries. Therefore, the relationship between happiness as well as economic variables has been analyzed taking into account the spatial correlation of countries. In the following parts of the study, the data and the economic analysis conducted will be discussed. In the fourth part of the study, happiness and the economic variables will be evaluated. The results obtained and the recommendations to be made are stated in the conclusion part of the study.

### 3. Method and Data Set

For the analysis, the following general specification was used:

$$\begin{aligned}
 y &= \rho W_1 y + X\beta + \varepsilon \\
 \varepsilon &= \lambda W_2 \varepsilon + u \\
 u &= \sim N(0, \sigma^2 I)
 \end{aligned}
 \tag{1}$$

where  $y$  is a vector of country-specific happiness,  $\beta$  is a vector of parameters associated with variables  $X$  (economic freedom, GDP per capita, the unemployment rate and inflation rate).  $\rho$  is the coefficient of the spatially lagged dependent variable;  $W_1$  and  $W_2$  are matrices of spatial weights;  $\lambda$  is the coefficient in a spatial autoregressive structure for the disturbance  $\varepsilon$  (Luc Anselin, 1998). The spatial matrix is established using the contiguity-based approach. Open GeoDa software was used for the modeling.

A classical linear regression model was considered under the assumptions  $\rho = 0$ ,  $\lambda = 0$ :

$$y = X\beta + \varepsilon \tag{2}$$

The second is a spatial lag model, under the assumption  $\lambda = 0$ :

$$y = \rho W_1 y + X\beta + \varepsilon \tag{3}$$

Third, a spatial error model was used, under the assumption  $\rho = 0$ :

$$\begin{aligned} \varepsilon &= \lambda W_2 \varepsilon + u \\ y &= X\beta + \varepsilon \end{aligned} \tag{4}$$

In this study, the World Database of Happiness was used as the happiness index variable. The World Database of Happiness provides a very important source of information for observing the progress of countries over time in terms of happiness. Produced by The United Nations Sustainable Development Solution Network, this register covers 156 countries. An index value was created by scaling how the country's citizens feel happy from 0 to 10 (World Happiness Report, 2019).

Although there are several measurements for the economic freedom variable, in this study, the Economic Freedom Index of the Heritage Foundation was used. This index is widely used in studies related to the relationship between economic freedom and happiness in general. This is an index of 186 countries with 12 types of freedom from property rights to financial freedom. These 12 types of freedom are collected under 4 categories of the rule of law (property rights, government integrity, and judicial effectiveness), government size (government spending, tax burden, and fiscal health), regulatory efficiency (business freedom, labor freedom, and monetary freedom) and open markets (trade freedom, investment freedom, and financial freedom). For these 12 freedoms, a scale from 0 to 100 is determined to identify the level of freedom of each country. The resulting weight of each type of freedom is equal. The 2019 economic freedom data used in this study covers the period from the second half of 2017 to the first half of 2018 (The Heritage Foundation, 2019). The unemployment rate, GDP per capita and inflation variables presented in this report are used as explanatory variables. A summary of the statistics for all the variables used in the analysis is shown in Table 1.

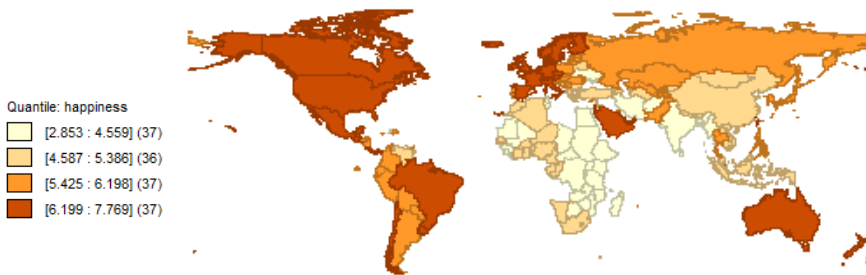
**Table 1** Summary statistics of the variables

Variable	Mean	Std. Dev.	Min	Max	N
Happiness	5.45	1.11	2.85	7.77	147
Economic freedom	62.19	10.42	25.90	90.20	147
Log GDP per capita	4.08	0.53	2.830	5.10	147
Unemployment rate	7.13	5.61	0.10	27.30	147
Inflation rate	12.00	89.51	0.90	1087.50	147

**Source:** The authors' calculations.

#### 4. Results

In this paper, spatial analysis was used to investigate whether there is any interaction between countries in terms of happiness. The map of happiness in regions across the world shows the distribution of happiness in the world with implied variations within each country. The dark color on the map shows the happiest regions. Variation of color intensity on the map from dark to light indicates the happiness levels of the countries from high to low. Finland, Sweden, and Norway, for example, are among the happiest regions of the world. In 2019, the happiness rates were generally distributed among developed countries.

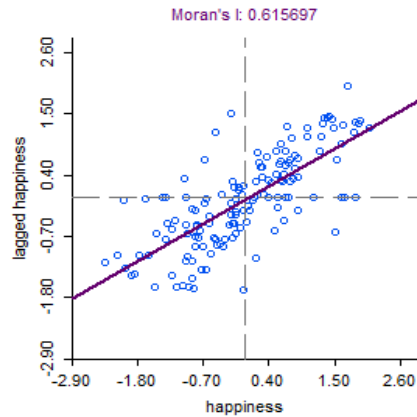


**Source:** Mapped by the authors

**Figure 1** Quantile map of happiness

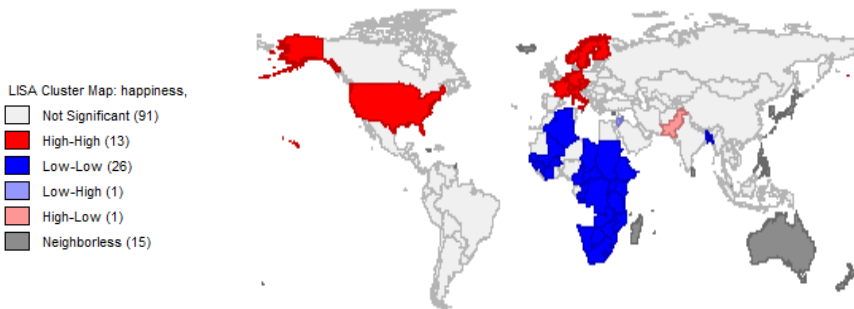
The Moran Scatterplot, suggested by Luc Anselin (1996), is used to display the happiness for each country (on the horizontal axis) against the standardized spatial weighted average (average of the neighbors' happiness) on the vertical axis. Quadrant I displays the countries with high happiness surrounded by countries with high happiness, and Quadrant III displays the countries with low happiness surrounded by countries with low happiness. These quadrants also refer to positive spatial autocorrelation, the spatial clustering of similar values (Sandy Dall'erba, 2006). From Figure 2 it can be seen that values are not randomly distributed in space, most countries are scattered in the first and third quadrant and that implies there is a positive spatial correlation.





**Source:** Mapped by the authors  
**Figure 2** Moran scatterplot of happiness

A local indicator of spatial association is used to show spatial clustering of similar countries. As shown in Figure 3, the different clusters of high and low happiness are a sign of spatial heterogeneity among countries. This implies that happiness differs at the regional level and countries affect each other through spillover conducted to inspect the spatial autocorrelation regionally.



**Source:** Mapped by the authors

**Figure 3** Cluster map of happiness

A multiple Ordinary Least Square (OLS) linear regression analysis was performed to create predictions about the relationship between happiness and economic variables. The OLS regression results are presented in Table 2.

**Table 2** Ordinary least squares model estimation results

<b>Dependent Variable: Happiness</b>	<b>Estimation</b>	<b>p-value.</b>
Constant	-1.190	0.005***
Economic freedom	0.017	0.034**
Log GDP per capita	1.428	0.000***
Unemployment rate	-0.032	0.001***
Inflation rate	-0.000	0.826
Jarque-Bera	3.130	0.209
Breusch-Pagan test	6.445	0.168
Multicollinearity Condition Number	26.7	
R-squared	0.677	
Log likelihood	-140.286	
Akaike Info Criterion (AIC)	290.573	
Schwarz Criterion (SC)	305.525	
Observations	147	

**Notes:** \*\*, and \*\*\* denote significance at the 5%, and 1% level, respectively.

**Source:** Authors' calculations

The results of the OLS indicate that both economic freedom and GDP per capita positively and strongly affect happiness, whereas unemployment negatively affects happiness. Considering the regression diagnostics, the multicollinearity test is <30 and there are no problems with correlation in the explanatory variables. Since the Jarque-Bera statistic probability is 0.209, the residuals are normally distributed and the model is not biased. The Breusch-Pagan test statistic probability is 0.168, indicating no problems with inconsistency among the variables.

**Table 3** Diagnostics for spatial autocorrelation

<b>Test</b>	<b>Value</b>	<b>p-value.</b>
Moran I (error)	4.9756	0.000***
Lagrange Multiplier (lag)	4.9093	0.026**
Robust LM (lag)	1.0076	0.315
Lagrange Multiplier (error)	21.5037	0.000***
Robust LM (error)	17.6020	0.000***
Lagrange Multiplier (SARMA)	22.5110	0.000***

**Notes:** \*\*, and \*\*\* denote significance at the 5%, and 1% level, respectively.

**Source:** Authors' calculations

The results of the tests for spatial autocorrelation are presented in Table 3. The Moran statistic ( $p=0.00$ ) suggests a problem with spatial autocorrelation. Lagrange Multiplier (LM) statistics are used to decide which alternative specification should be used. The Lagrange Multiplier (lag) and the Lagrange Multiplier (error) statistics are significant. Thus, the use of robust forms of these statistics allow for discrimination between alternative models (Luc Anselin, 2005). The Robust LM (error) statistic is

significant ( $p=0.00$ ), while the Robust LM (lag) statistic is not ( $p=0.315$ ). These test statistics suggest a spatial error model. The decrease observed in both the AIC and the SC suggests that the spatial error model produces better results than the OLS model. Therefore, the spatial error model was applied in the following part.

**Table 4** Spatial error model model estimation results

<b>Dependent Variable: Happiness</b>	<b>Estimation</b>	<b>p-value.</b>
Lambda	0.439	0.000***
Constant	-0.618	0.217
Economic freedom	0.015	0.034**
Log GDP per capita	1.305	0.000***
Unemployment rate	-0.022	0.027**
Inflation rate	-0.001	0.309
Jarque-Bera		
Breusch-Pagan test		
R-squared	0.735	
Log likelihood	-129.771	
AIC	269.542	
SC	284.494	
Observations	147	

**Notes:** \*\*, and \*\*\* denote significance at the 5%, and 1% level, respectively.

**Source:** Authors' calculations

The estimated results for the spatial error model of happiness for the complete set of 147 countries in 2019 are shown in Table 4. The spatial autoregressive coefficient ( $\lambda$ ) is highly significant. This implies that countries that have low happiness but are surrounded by neighbors that are above average in terms of happiness tend to be happy. Previous literature reports on happiness agree with this finding. Brereton Clinch, and Ferreira (2008) stated the critical importance of the spatial dimension in determining well-being. Stanca (2010) highlighted that geography must be considered in order to examine the relationship between economic conditions and well-being. Pierewan and Tampubolon (2014) showed the importance of taking into account unobserved factors in the neighboring region to be able to understand individual well-being.

Economic freedom was determined to be positively and significantly associated with happiness. This finding is consistent with the literature (Veenhoven, 2000; Ovaska and Takashima, 2006; Gropper, Lawson, and Thorne Jr., 2011; Belasen and Haffer, 2013; Jackson, 2017; Bennett and Nikolaev, 2017). Veenhoven (2000) also found a positive relationship between economic freedom and happiness.

GDP per capita was seen to be positively and significantly associated with happiness, and people living in regions with high-level GDP tend to have high levels of happiness. The finding on GDP supports the findings of previous studies (Di Tella, MacCulloch, 2006; Angus Deaton, 2008; Stevenson and Wolfers 2008). Veenhoven (1989) revealed that people in poor countries were more unhappy, and that post-war

economic development in Western Europe was in parallel with the rise in happiness. Thus a strong relationship was indicated between income and happiness and that this relationship may occur simultaneously or be delayed (Veenhoven, 1989; Hagerty and Veenhoven 2003; Veenhoven Ruut and Floris Vergunst, 2014; Veenhoven and Dumludağ, 2015).

Unemployment was found to exert a strong negative influence on happiness. The finding that unemployment negatively affects happiness is consistent with earlier research. The determination that unemployment reduces happiness (Clark and Oswald, 1994; Oswald, 1997; Frey and Stutzer, 2000; David G. Blanchflower, 2001; Andrew J. Oswald, 2003; DiTella and MacCulloch, 2006; Andrew E. Clark, Ed Diener, Yannis Georgellis, and Richard E. Lucas, 2008, Sibel Selim, 2008; Devrim Dumludağ, 2013; Pierewan and Tampubolon, 2014; Devrim Dumludağ, Özge Gökdemir, and Selay Giray, 2016) is evaluated in this context. It has been demonstrated in studies conducted in different countries that unemployment makes people unhappy.

## **5. Conclusion**

Studies analyzing the relationship between economic conditions and happiness have generally neglected the spatial effects. In the present study, a spatial dimension was added to the existing literature. According to this literature, economic freedom and GDP per capita play an essential role in explaining the cross-national variation of happiness. The results presented in this article suggest that economic freedom and GDP per capita have a significant positive influence on happiness, whereas unemployment has a significant negative effect. This means that a lower level of unemployment is correlated with a higher level of happiness, and a higher level of economic freedom is correlated with a higher level of happiness. The results of this study also support the idea that ignoring spatial dimensions would be misleading. Therefore, the spatial dimension has an important position in determining happiness, as the spatial dimension and economic factors have a powerful influence on happiness. This finding also indicates the effects of countries with a higher level of happiness on neighboring countries, as the findings show that happiness in one country affects neighboring countries positively by virtue of spillover effects. In other words, a higher level of happiness in a country contributes to the happiness of not only that country, but also its neighbors. Therefore, it has been observed that countries categorised by high levels of happiness and low levels of happiness are highly spatially clustered. Nevertheless, much further research is needed. If countries are classified and analyzed according to their development levels, different results may be achieved.

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