Unraveling the Causal Link Between Corruption and Happiness: Insights from Developing and Advanced Economies

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Abstract: In recent years, the concept of the corruption economy has gained significant prominence on the international agenda. Corruption generates numerous adverse effects, including reductions in tax revenues, the exacerbation of income inequality, and the misallocation and waste of public resources. The present study examines the causal relationship between perceptions of corruption and perceptions of happiness at the country level. For this purpose, the study applies panel Granger causality analysis to data from 81 countries for the period 2010–2023. After analysis of the full sample, countries are classified as developing or advanced economies based on the International Monetary Fund (IMF) classification. Causality tests are applied to both groups and are interpreted comparatively. After controlling for macroeconomic variables such as per capita economic growth, unemployment, and inflation, the results reveal a unidirectional causality from perceptions of corruption to perceptions of happiness at the global level. However, subgroup analyses indicate a bidirectional causality in developing economies and no significant causality in advanced economies. These findings underscore the critical role that the level of development plays in shaping the interaction between the perceptions of corruption and happiness.

Keywords: *Corruption, happiness, well-being, panel causality*
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Introduction

Corruption has existed at various levels across societies since ancient times and remains one of the most pressing challenges worldwide, affecting both public finance and economic performance. This has prompted growing interest among economists in its broader social consequences, particularly its relationship with happiness. Although a negative association between corruption and happiness is widely acknowledged, the direction and underlying mechanisms of this relationship remain unclear. The primary aim of this study is to investigate the interaction between corruption perception and national happiness levels using bidirectional causality analysis. Unlike most existing

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research, which examines unidirectional effects by treating one variable as the determinant of the other, this study explores potential reciprocal relationships. The secondary aim is to analyze this relationship across country groups classified by development level, highlighting the need for differentiated policy approaches in combating corruption and improving well-being in developing and developed economies. Tailoring governance mechanisms to economic development levels can enhance policy effectiveness. Using data from 81 countries between 2010 and 2023, the study provides empirical evidence on the relationship between the perception of corruption and happiness. Causality analyses are conducted first for all countries and then separately for developing and developed economies, as classified by the IMF. Key macroeconomic variables, including per capita economic growth, unemployment, and inflation, are included as controls. The direction of causality and the effects of these controls are evaluated comparatively across country groups.

This study contributes to the literature in several ways: (1) testing the interaction between corruption and happiness using bidirectional causality analysis, clarifying the causal direction; (2) examining the direction of causality for both key and control variables across different development levels; and (3) emphasizing the importance of differentiated policy strategies for enhancing well-being and reducing corruption globally. The paper is structured as follows: the first section reviews the literature on corruption, followed by a discussion of happiness and studies linking corruption to happiness. The third section introduces the variables and models, alongside the empirical analysis, and the final section concludes with implications and recommendations.

1. Literature on Corruption

Corruption is an abstract concept that is informal and confidential by its nature, is based on complex processes and relationships, and its perception varies according to multiple factors. Corruption may differ between countries or even regions of a country. Additionally, definitions, understandings and attitudes toward corruption may differ cross-culturally and cross-nationally. Another factor impacting individuals' approaches to corruption is the prevailing macroeconomic system in the country or region where they reside. Factors such as the functioning of processes in macroeconomic systems, the structure of sectors and administrative mentality may influence the perspective on corruption. For these reasons, a single and general definition of corruption is difficult to determine. Although many definitions of corruption are used in the academic literature and the public domain, one of the most frequently invoked is that of the World Bank: "the misuse of public office for private gain" (World Bank, 1997). Private gain means an individual obtaining money, valuable assets, increased power and status, or an expectation of future privilege or benefit. In contrast to individual gain, private gain can benefit a party, a group, a friend or a family (Johann G. Lambsdorff 2007).

Robert Klitgaard (1991) defined corruption as a breach of rules and illicit behavior, describing it as a departure from official roles or legal duties for private

reasons, such as personal or family. Further, he mechanized corruption as "corruption = monopoly of power + discretion - accountability" (Klitgaard 1998). Andrei Shleifer and Robert W. Vishny (1993) defined corruption in more context-specific terms as the "[s]ale of government property by government officials for personal gain." Corruption is often described as a phenomenon that causes public harm, emphasizing its public sector side (Mustafa Çelen 2007).

In Klitgaard's equation, which aims to explain corruption, power concomitant with discretion is an important determinant that can be kept in check if adequate accountability protocols are in place. Importantly, Nobel Prize-winning economist Gary Becker suggested that we could reduce corruption only if we could cut the government. However, corruption is a problem not only in the public sector but also in the private sector. Moreover, a civilized society cannot sustain itself without a government, and every system has functions that need to be undertaken more or less by the government. Becker's claims contradict empirical observations in low-corruption countries such as Canada, Denmark, Finland, the Netherlands, and Sweden, which have large public sectors, as measured by the share of gross domestic product (GDP) and tax revenue (Vito Tanzi 1998).

Corruption also appears to be a fact in the private sector and the public domain, and this corruption is not merely intra-sectoral: the private sector can and does engage in corruption inter-sectorally with government officials and government agencies (Klitgaard 1998). Corruption is sometimes considered to have a functional quality, such as bribery, which can manifest in privatization policies by establishing strong ties between the business world and government (IMF 2016). Also, at the micro-level, a taxi driver charging over the fare rate or a doctor charging for a service he does not deliver, or only partially delivers, at a private hospital, are examples of private sector corruption. Thereby, corruption can exist at many levels, both within and between the public and private sectors. Categories of corruption include big-small, political-administrative, and legal-ethical. Bribery is one of the key tools of corruption; other tools include fraud, nepotism, graft, theft, extortion, embezzlement, logrolling, lobbying, rent-seeking, influence peddling, and campaign financing (World Bank 1997; Tanzi 1998; Özsermayeci 2003). These all have different levels of impact on areas within and between the economy, policy, society, culture, and the environment.

Today, we encounter corruption in developed, developing, and less developed countries in every area. Corruption is a particular obstacle in developing countries (OECD 2025), hindering economic development and growth and exacerbating income inequality (Cecilie Wathne 2021). The World Economic Forum has estimated the annual cost of corruption in developing countries as USD 1.26 trillion (World Economic Forum 2019). Governments and international organizations establish policies to minimize and prevent corruption and its negative externalities. In this respect, inter-governmental and inter-organizational cooperation is not just desirable, but necessary. International institutions, including multinational companies, the OECD, the World Bank, and the IMF, educate people by cooperating to execute important tasks, placing the necessary pressure on individuals, institutions, and/or groups to garner support and resources for economically and socially desirable interventions.

Measuring corruption is not straightforward: it most often occurs secretly because it contravenes legal and ethical regulations. Still, measuring corruption is necessary before it can be effectively minimized or avoided. The World Bank set four criteria as an initial step for measuring the many existing types of corruption. These are i) valuation of net assets, ii) arrest and accusations, iii) survey and interview, and iv) empirical macroeconomic works (Bayar 2007).

Tanzi (1998) echoes the concern of other scholars and practitioners in noting that measuring corruption directly is not easy. He adds, however, that information about its spread in a country or an institution could be captured in many ways and that this useful information can be obtained through the following sources: i) reports about corruption received from resources including newspapers, ii) work by corruption agents employed by tax and customs offices or police establishments, and iii) survey-based research.

Erlend Berg (2001) defines corruption criteria at the country level in terms of "objective" and "subjective" variants. Objective criteria depend on available data, for example, the number of corruption crimes in a given country in a given year. However, the validity of such data may be questionable, particularly in resource-constrained countries with nascent procedures and organizations for collating such data. For this reason, they are not very useful for comparison. To circumvent these obstacles to some extent, subjective criteria are identified and operationalized based on perceptions and experiences.

Focusing on subjectivities, the Corruption Perceptions Index (CPI) is accepted as a basic indication. Various national and international institutions and associations have developed this index. Corruption is proxied using this index through surveys of individuals in different countries and institutions. Transparency International releases the CPI annually, while the World Bank releases the Control of Corruption Index. Both are considered relatively reliable indices based on annual data for many countries and enable both national and international comparisons.

Empirical literature on corruption has frequently focused on the impacts of corruption on economic growth, revenue and resource allocation, public spending and incomes, and similar subjects. Different viewpoints are put forward regarding the positive or negative impacts of corruption on economic growth. Nathaniel H. Leff (1964) and Samuel P. Huntington (1968), among others, have asserted that corruption benefits the economy through two mechanisms. First, corruption provides individuals with "speed money," avoiding bureaucracy-based delays. Second, the official who is bribed performs more work in return. Ergo, the defenders of corruption focus on its impacts in terms of speeding up the economy and increasing employee efficiency (Mauro 1995). The beneficial effects of corruption are explained based on the "grease the wheels" hypothesis. In a country where institutions function poorly, the assumption is that corruption can help compensate for bad governance. The "grease the wheels" hypothesis suggests that corruption, as a problem-solving tool, can increase efficiency, thereby boosting investment and ultimately growth (Pierre-Guillaume Méon and Khalid Sekkat 2005). Daron Acemoglu and Thierry Verdier (1998) and Klitgaard (1988) stated that, theoretically, if the cost of fighting against corruption is high, the

level of corruption that maximizes production can be bigger than zero, as was later proven by Fabio Méndez and Facundo Sepúlveda (2006).

On the other hand, the notion that corruption has negative impacts on economic growth has been defended by many scholars, including Gunnar Myrdal (1971) and Shleifer and Vishny (1993). Nobel laureate economist Myrdal studied corruption as an economic research topic. Myrdal (1971) explained that the prevalence of corrupt practices was an obstacle to development, hindering the achievement of modernization ideals. Shleifer and Vishny (1993) investigated the main reasons why corruption is costly. They argued that the first reason is the weakness of the government, and the latter is the distortion caused by the illegality and necessary secrecy of corruption. Klitgaard (1991) indicated that the harmful impacts of corruption, particularly in developing countries, significantly exceed the social benefits thereof. Studies supported by the World Bank in this domain showed similar results (Klitgaard 1991; World Bank 1997; Méndez and Sepúlveda 2006). Mauro (1995) posited a linear negative correlation between corruption levels and average growth rates of income. In terms of cross-national economic activities, Shang-Jin Wei (2000) established that corruption reduces foreign direct investment. Importantly, empirical research overwhelmingly suggests that the net effects of corruption on economic growth are negative and damaging in many ways (IMF 2016).

Tanzi and Davoodi (1997) noted that corruption increased public investments but reduced the productivity of these public investments. The authors point out that investments within the distribution of public expenditures are more conducive to corrupt activities. Because major corruption cases are often associated with capital projects, corruption appears to increase the number of projects undertaken and the level of investment in a country. Although investments are an important component of economic growth, the average efficiency of investments that increase due to corruption declines, so the increased investments do not fuel economic growth; on the contrary, they may reduce growth by decreasing productivity (Tanzi and Davoodi 1998). Another study by Tanzi and Davoodi (2000) found that corruption affected the structure of taxes through its impact on aspects of public finance. The authors also specifically suggested that the high level of corruption in developing countries can be partially explained by the dominant share of indirect taxes in total tax revenue.

Paolo Mauro (1998) analyzed the relationship between corruption and government expenditure. This study posits that corruption changes the composition of government expenditure, particularly by decreasing investment in education. The conclusion was that countries with higher corruption invest less in education, with some evidence suggesting that corruption also decreases expenditure on health. These results are consistent with the notion of a stronger inverse relationship between government expenditure on education and opportunities for rent-seeking compared to government expenditure in other domains, which are more vulnerable to rent-seeking. A suggestion relating to the correlation between corruption and government expenditure is that while collecting bribes, corrupt government officials found some spending items easier than others (Mauro 1998). Gupta et al. (2001) evaluated the relationship between GDP and corruption regarding military spending, and suggested that high military spending may provide more opportunities for corrupt activities.

Gupta et al. (1998) asserted that a high or increasing level of corruption increases income inequality and poverty by reducing economic growth, while deleteriously affecting the progressiveness of the tax system, the level and efficiency of social spending and human capital. Moreover, it serves to institutionalize unequal distribution of asset ownership and unequal access to education. Through a comparative analysis, You Jong-Sung and Sanjeev Khagram (2005) found similar results, suggesting that income inequality causes increased levels of corruption.

Oskar Kurer (1993) stated that corruption has a negative impact not only in areas involving rent-seeking but also on the allocation of resources in other areas.

Based on studies in the literature, corruption has negative consequences for the public economy and public finances and negatively affects the success of government policies. Corruption leads to decreased public revenues and excessively increased public expenditures, which are the primary tools of fiscal policy. Corruption unbalances the budget by reducing tax collection and/or increasing public spending, thus reducing the quality of public services. It negatively affects the economic performance of countries and the distribution of public expenditures. Corruption undermines the functioning of the market and the allocation of resources, preventing the government from carrying out regulatory and inspection activities to correct market failures. Corruption also increases poverty by undermining the earning potential of low-income earners. Corruption reduces foreign direct investment inflows by creating harmful effects on the investment environment. It undermines economic growth and democracy, causes unfair competition, and has many negative effects (Mauro 1997; Lambsdorff 2005; Mauro 1998; Tanzi 1998). Although most studies in the literature emphasize the economic costs of corruption, corruption entails numerous different costs. The costs of corruption fall into four main groups: political, economic, environmental, and social (Transparency International 2022). In terms of political costs, corruption hinders democracy and the law. People misusing their roles for personal gain compromise the legitimacy of institutions and government offices in democratic societies. Accountable political leadership is extremely problematic to achieve in the presence of corruption.

Economically, corruption decreases national wealth. Empirical studies available in the literature emphasize the economic costs of corruption.

Environmental degradation is another consequence of corruption. Allowing construction in protected areas, which are the products of many civilizations dating to pre-history, for the sake of personal gain and ignoring unsustainable rates of environmental damage in return for bribes are relevant examples here (Transparency International 2022).

The social costs of corruption are also important. Corruption damages social structures and shakes the trust and tolerance of people vis-à-vis their political systems, leaders, and institutions (Transparency International 2022). Mistrust, intolerance, and damage to perceptions of equality and justice harm the happiness levels of society. Indeed, the aforementioned economic, political, and environmental costs can also affect happiness.

The question is how the level of happiness in societies or individuals can be measured. We foreground this question by first exploring the concept of the economics of happiness.

2. Concepts of Happiness and the Literature on Corruption and Happiness

The concepts of economic growth and welfare have long been at the center of societies' efforts to improve the quality of life. While in the past, the focus was primarily on economic growth and material welfare at any cost, approaches such as sustainable development, degrowth, inclusive growth, and long-term growth have since been developed. The idea that economic growth and material welfare alone are not always sufficient to ensure the happiness of individuals and society was particularly brought to attention with Richard Easterlin's (1974) presentation of the Easterlin Paradox, which opened the way for new perspectives on the relationship between material welfare and happiness.

A body of research has been established on happiness, the pleasures of life, and well-being. Various methodologies have been employed by governments, research centers, and international organizations to investigate issues in these areas. Many philosophers and social scientists have tried to define holistic well-being and happiness. Ed Diener (1984) divided the definitions of subjective well-being (SWB) into three groups. The first group uses external criteria such as well-being, virtue, and holiness. The framework of the second group describes SWB as life satisfaction, using answers received to the question “What is a good life?” The third group of definitions says that the impact of happiness is more positive than negative, describing it as a nice emotional experience.

The concept of well-being and happiness has been explored across many disciplines. While the phenomenon of happiness was previously a subject of medicine, psychology, and sociology, it has become a field of interest for economics, and the literature on life satisfaction and happiness economics has increased continuously (Bing Yan and Bo Wen 2019, p.1312- 1313). Leading scholars have analyzed it in detail: Daniel Kahneman et al. (1999) and Michael Argyle (2001) from a psychological point of view; Ruut Venhoveen (1988, 1992, 1996, 1997, 2000) from a social point of view; and Richard Easterlin (1974, 1995, 2001), Andrew E. Clark and Andrew J. Oswald (1994), Rafael Di Tella et al. (2001), Bruno S. Frey and Alois Stutzer (2012), Michael McBride (2001), Andrew J. Oswald (1997), Menno Pradhan and Martin Ravallion (2000) and Van Praag et al. (1999) from an economic point of view (indicated by Rojas, 2004). Economists initially conducted their research on individual SWB from a microscopic perspective; they examined the effects of micro factors such as education level, health status, age and marital status on SWB. However, over time, the perspective on this subject has broadened, and many economists have also begun to examine the effects of macroeconomic variables, such as inflation, unemployment, government expenditures, social mobility and institutions on SWB (Yan and Wen, 2020, pp. 1312-1313). Analyses of subjective economic well-being, a relatively new area of research compared to psychological and social approaches, recognize Easterlin as the pioneer of the economics of happiness, as indicated by Mariano Rojas (2004).

According to conventional economic perspectives, the primary objective of any economy should be to raise its GDP, based on the assumption that, if other factors remain unchanged, this would allow individuals to consume more goods and services. Consequently, economic growth is expected to enhance living standards and increase overall public happiness (Richmond Atta-Ankomah et al., 2024). In this context, many studies in the economics of happiness literature analyze the effects of countries' development levels on happiness (Tella et al. 2001; Richard Layard 2006; Margit Tavits 2008; Duha T. Altindag and Junyue Xu 2017). Developing countries face structural problems such as unemployment, low savings rates, inflation, and income inequality. Economic growth in these countries is fragile and often unstable, and social rights and social security systems are also weak. These conditions in developing countries can affect individuals' levels of happiness. Economic indicators such as the development levels of countries were initially considered important determinants of happiness (Nidhi Jaswal et al. 2024; Stefano Bartolini and Francesco Sarracino 2014). However, these assumptions were questioned with the development of the Easterlin Paradox, leading to the search for new determinants of happiness.

Easterlin examined the relationship between economic growth and happiness in his 1974 study "Does Economic Growth Improve the Human Lot?" This study proposes a basic concept in happiness economics: the Easterlin Paradox. According to Easterlin, the relationship between income and happiness is positive. However, this is not a matter of fact in the long run. It has been said that income increases do not lead to increases in long-term happiness, and economic growth has a limited direct impact on people's happiness beyond meeting their basic needs. According to Easterlin, when a society's basic needs are met, it should focus on gross happiness instead of trying to increase GDP.

In his 1976 study "The Joyless Economy: An Inquiry into Human Satisfaction and Consumer Dissatisfaction," Tibor Scitovsky explained why increases in wealth did not satisfy the benefit owners. He indicated that the evaluation of national revenue and national product by economists has many areas of use, but they are not suitable as an indication of human welfare. He added that economic goods and services are only one of the resources relating to human pleasure, and an economist should not make such an evaluation. He also said that most probably, national income is an indication of economic welfare, but economic welfare is only a fractional indication of human welfare.

Scitovsky posited that increases in material living standards were relevant to pleasure in relation to status, job satisfaction, and delight of change. He argued that a significant rise in income increased the chance of happiness, and this increase depended only on the relevant individual's rise in income, not on the general increase in everyone's income. In this respect, gaining societal status is important for happiness. Those in the high-income group who have lately experienced large income increases were still happy because this was a new situation for them. Another relationship in terms of happiness has been established by whether an increased living standard provides an encouraging and satisfying innovation or change. A change made to be happy may increase or decrease our standard of living and comfort. For example, our comfort when going camping or on holiday may be below what we are accustomed to.

A young individual who leaves their parents' house to pursue their own interests and thus sacrifices the comfort and luxury of the family home may live more happily and with greater pleasure even though they are now experiencing greater resource constraints. Apart from that, change and innovation may make someone happy. In cases of a decline in living standards because of economic difficulty, this situation can be quite painful. Indeed, the existence of this threat may be more painful than its realization. This can be explained by the loss of stature symbolizing such a decline. For many people who feel their status depends on their income, a decrease in income or a threat to it may be painful. As a result, earned stature and ranking may beget dependence. Initially, earning stature provides satisfaction for the person. With time, he accepts it and then tries to protect it, not for the satisfaction already achieved but from the fear of losing it. At that point, the person becomes dependent. Addictions like smoking and activities such as taking a bath are also related to happiness. Given this information, Scitovsky stated that happiness depends on a person's rank in society, but is very little connected to their income (Scitovsky 1992).

The view that happiness cannot be explained solely by economic indicators such as income has been emphasized by contemporary approaches, which argue that an individual's quality of life should be evaluated within a broader framework that includes factors such as social trust, access to healthcare, and expectations for the future (Diener et al. 2010). The concept of SWB refers to the various ways individuals express their feelings about their lives, such as general happiness and satisfaction across different life domains, such as employment, health, and education (Carol L. Graham 2011). In this context, low levels of well-being can result from a variety of structural and individual factors. In particular, economic uncertainties, job insecurity, and inadequate social protection mechanisms prevalent in developing countries can create a chronic sense of insecurity among individuals, all of which negatively affect life satisfaction and SWB (Andrew E. Clark and Conchita D'Ambrosio 2018).

In recent years, the economic analysis of happiness has increased in importance. The economics of happiness, which is closely related to the economics of welfare, behavior and development can be approached and operationalized differently depending on scholarly predispositions. While discussions on the matter of happiness replacing "benefits" in the scope of welfare economics and behavioral economics continue, in relation to development economics, happiness is explained as a development indicator (Ruut Veenhoven and Devrim Dumludağ 2015).

Studies of the assessment of social development gained importance in the last few decades, with a focus on individual-oriented measures. Criteria such as life satisfaction, work-life balance, income and wealth, health and education situation, environment and security, civil participation, access to infrastructure services, the person's social life, and their subjective perceptions are used together in these studies. Around the world, the level of happiness of individuals is measured using different approaches. Ed Diener et al. (1985) developed the Satisfaction With Life Scale to measure global life satisfaction. Later, Connor and Davidson (2003) developed the Connor Davidson Resilience Scale (CD-RISC). Today, many surveys are used worldwide to measure happiness. The World Happiness Database, the World Values Survey, the Gallup World Poll, the Eurobarometer administered by the European

Commission, and the Latinobarómetro used by Latin American countries are pertinent examples.

The World Happiness Report is prepared annually based on data obtained from Gallup Company surveys to measure global happiness levels and is a significant study in this field. The reports evidence how the new science of happiness explains changes in personal and national happiness by reviewing happiness worldwide. Moreover, this report reflects a new demand to prioritize happiness as a criterion for government policies (World Happiness Report 2022). In this context, some governments have established initiatives related to happiness. Venezuela created the Vice Ministry of Supreme Social Happiness in 2013, the first known formal government department of its kind. A Minister of Well-being has been established in Ecuador, while the first Minister of Happiness in the United Arab Emirates commenced her role in 2016.

The view that higher levels of corruption in countries are associated with lower levels of happiness is widely supported by many researchers (John F Helliwell 2003; Christopher J. Anderson and Yuliya V. Tverdova 2003; Mark E. Warren 2004). Helliwell (2003) stated that individuals with the highest levels of SWB are typically found not in the most affluent countries, but in societies where social and political institutions function effectively, mutual trust is strong, and corruption is relatively low. Similarly, Anderson and Tverdova (2003) explored how corruption influenced individuals' attitudes toward government. Their findings indicated that in nations where corruption is more widespread, citizens tended to evaluate the political system more negatively and show reduced trust in public officials.

Various arguments underpin the theoretical background of the relationship between corruption and happiness. One such argument posits that this relationship arises from the impact of corruption on public finance. One of the fundamental reasons for government intervention in the economy is to provide public goods and services. The primary source of funding for these goods and services offered by the public sector is taxation. Nevertheless, in societies where corruption within the public sector is widespread, some officials may misuse these resources for personal gain. When access to public goods is limited to individuals with personal connections or financial means, those lacking such advantages face considerable inequality (Tavits, 2008). In this context, corruption can also be viewed as a cost that must be borne when high levels of corruption create barriers to accessing public goods and services. Monika Bauhr (2017) investigated whether corruption is driven by “need” or “greed.” Need-based corruption is considered a systemic governance failure forcing individuals to pay bribes to access basic services, whereas greed-driven corruption involves illicit private gains, unfair privileges, and corrupt practices to secure service access (Monika Bauhr and Nicholas Charron, 2020; Bauhr 2017).

Moreover, when viewed in terms of the distribution of public expenditures, the opportunity cost of funds diverted due to corruption is the public goods and services that remain undelivered. Corruption undermines the fiscal capacity of governments to deliver essential public services, such as healthcare, education, and social protection, which are positively correlated with SWB (Yan and Wen 2019; Justina Shiroka-Pula, Will Bartlett and Besnik A. Krasniqi 2023). Therefore, when individuals perceive corruption as widespread within the government, they are likely to believe or be aware

that public officials will not allocate tax revenues efficiently or fairly. Hence, assuming other factors remain constant, heightened perceptions of corruption are likely to diminish individual well-being (Iddisah Sulemana 2015).

Heinz Welsch (2008) demonstrated that corruption affects national welfare both indirectly, through its impact on GDP, and directly, for example, via the time and resources individuals must expend to navigate corrupt practices, or through the psychological burden arising from a pervasive sense of lawlessness. Furthermore, the study concluded that the direct effects of corruption on individual welfare are significantly more pronounced than its indirect effects.

Corruption has also been argued to negatively affect SWB by causing income inequality (Yan and Wen 2020). Within the literature on the relationship between income inequality and SWB, two opposing hypotheses exist: the relative deprivation hypothesis and the tunnel effect hypothesis. The theory of relative deprivation posits that individuals may perceive themselves as deprived of desirable resources or conditions relative to their own past experiences, other individuals or groups, or social categories (Iain Walker and Thomas F. Pettigrew 1984). Living near wealthier individuals, such as neighbors, is often associated with reduced SWB, a pattern frequently attributed to social comparison mechanisms. Relative income, that is, whether a person has more or less income compared to others, can be as important as absolute income in predicting life satisfaction (Felix Cheung and Richard E. Lucas 2016). Individuals may experience a sense of deprivation regarding things they see others possessing but do not have, which can lower their well-being. Accordingly, in societies with high levels of corruption, individuals' well-being may be negatively affected due to their relative incomes.

Conversely, the tunnel effect hypothesis presents an opposite view. Albert Hirschman and Michael Rothschild (1973) illustrated their hypothesis using the example of traffic congestion. According to them, when traffic is congested in a two-lane tunnel moving in the same direction, the sudden movement of cars in one lane generates feelings of optimism and happiness among drivers in the other lane. Even if traffic in one's own lane remains stalled, the awareness that the congestion is resolving and it will soon be one's turn to move improves one's mood. In this context, witnessing vehicles in the neighboring lane clearing traffic serves as a source of hope and increases well-being. Applied to income inequality, the tunnel effect suggests that rapid economic development accompanied by high levels of income inequality may initially be tolerated by society. The poor may even adopt a positive attitude toward inequality, based on the hope and expectation that their own well-being will improve. This reflects a tunnel effect. However, if income inequalities persist over time, the tunnel effect fails, and income distribution inequality damages well-being (Quanda Zhang and Awaworyi Churchill 2020).

Another argument explaining the relationship between corruption and happiness is that corruption erodes trust (Bo Rothstein and Daniel Eek 2009; Borlea, Achim, and Rus 2019; Muhammad H. Danish and Shahzada M. N. Nawaz 2022; Marco Ciziceno and Giovanni A. Travaglino 2019). Rothstein and Eek (2009) concluded that corrupt behavior by public authorities has a clear negative impact on people's trust. Furthermore, when individuals encounter deceptive behavior from

public officials, they not only lose their trust in these institutions but also come to believe that people in society, in general, are less trustworthy. These effects have consistently appeared across various national contexts, for example, Sweden, a high-trust/low-corruption country, versus Romania, a low-trust/high-corruption country. Thus, corruption can be said to undermine both institutional and social trust.

Trust can be defined as a form of social capital that significantly influences well-being (John Hudson 2006; John F. Helliwell and Robert D. Putnam 2004). According to the Social Capital Theory, social capital consists of social structures, including networks, shared norms, and trust, that promote cooperative behavior and coordination aimed at mutual benefits (Robert D. Putnam 1995). Therefore, the presence of corruption reduces overall well-being through its detrimental effects on trust.

Corruption, as discussed above, tends to harm areas such as growth, investment, and employment in many countries, lowering individuals' expectations and hopes for these macro-indicators (IMF 2016). If corruption in a society does not provide an individual with a positive externality, it may harm their future life expectancy and reduce their pleasure in life. The shaken confidence in governments due to corruption may cause individuals to become more aggressive and unhappy because they will question the concepts of justice and equality. Corruption may even lead to civil war or conflict, with negative psychological and social impacts on individuals and society. The individual's level of happiness and life satisfaction may be influenced by all the economic, political, environmental and social costs of corruption. Moreover, considering the relationship between happiness and corruption, happiness levels per se can also be assessed as a reason leading to corruption.

Studies in the literature regarding corruption often focus on reasons for corruption and its consequences, including various studies on the social effects of corruption, social progress, institutions and behavioral factors. Borlea, Achim, and Rus (2019) conducted a cross-country survey of 148 countries and examined whether the corruption levels of countries were related to behavioral factors such as culture, tax morale, trust, religion or happiness. The survey found that power distance, trust in the legal system, happiness and religion are the most important behavioral determinants of corruption, accounting for 50% of the world's corruption level. Frey and Stutzer (2012) also found that happiness played an essential role in many important economic decisions such as working behavior, investment behavior, consumption activities and political behavior.

Carmelo J. León, Jorge E. Araña and Javier de León (2013) explored the issue of the social cost of corruption by estimating the relationship between satisfaction and corruption with microeconomic or individual data. In this context, they conducted an online survey by random sampling of citizens in Spain in 2008. Their results show a scale perception bias in the measurement of corruption and/or satisfaction perceptions. This allows individuals to respond to survey questions using different response scales. According to their survey results, the social cost of corruption cannot be measured accurately.

Elma Satrovic, Özge Çetiner and Adnan Muslija (2018) analyzed the impact of controlling corruption on happiness as a proxy for social progress. They applied panel

data analysis for 59 countries over the period 2007-2016. They state that the process of reducing corruption is long and complex, and the impact of controlling corruption on happiness is found to be positive and significant for social progress only in the long run. Moreover, Bo Rothstein (2010) investigated corruption, happiness, and social confidence in relation to the welfare state. Rothstein stated that countries tend to cluster in countries with large and mostly universal welfare state programs, and having low levels of corruption, high levels of social trust, and high levels of happiness and social well-being.

Rita Remeikienė et al. (2020) examined the interrelationship between corruption and quality of life indicators in European Union (EU) countries. The study groups countries by their year of accession to the EU and covers the period from 2004 to 2017. According to the study results, with the improvement of at least one quality of life indicator (education, health system and general economic situation in the country), improvement is also observed in the corruption index.

Christopher L. Ambrey et al. (2016) examined the role a free press plays in controlling corruption and its potential effects on national income or social welfare. In this context, they analyzed data for 135 countries between 2007 and 2011. According to the results of the analysis, freedom of the press controls corruption and is thus associated with per capita real GDP growth and (independently) higher life satisfaction. Mak Arvin and Byron Lew (2014) examined the relationship between per capita income level, happiness and corruption. The results show that corruption reduces happiness only in high-income countries, not in all countries.

Monica V. Achim and Anca Bâtea (2021) researched the relationship between happiness, corruption and the informal economy in a survey study involving 101 participants in Romania. According to the analysis, the happiness of the Romanian people is not particularly associated with financial matters, but rather a result of having a family, professional and spiritual satisfaction. Money and property are at the bottom of the ranking. In addition, corruption and the informal economy are not perceived as completely influencing the level of happiness that Romanian people perceive.

Wen-wen Zheng et al. (2017) examined the relationship between corruption perception, political participation, and life satisfaction. According to the study, which involved 179 Chinese adults, the perception of corruption is negatively related to political participation. Life satisfaction softens the relationship between individuals' perception of corruption and political participation.

Numerous studies examine the effects of corruption on the psychology of individuals. The impact of corruption on mental health issues such as anxiety, suicide rates and depression was evaluated. In his study on corruption and anxiety in Sub-Saharan Africa, Robert Gillanders (2016) found a strong relationship between individuals' experience of corruption and their self-reported anxieties. Eiji Yamamura, Antonio R. Andrés, and Marina Selini Katsaiti (2012) analyzed the effect of corruption on suicide rates. They applied panel data analysis for 24 OECD countries between 1995 and 2004 and found that countries with lower corruption had lower suicide rates. They also evaluated the effect based on gender and concluded that it is about three times higher in men than in women. Smriti Sharma, Saurabh Singhal, and FinnTarp (2021) evaluated the relationship between corruption and mental health with evidence

from Vietnam. The study examined the relationship between exposure to local corruption and mental health as measured by depressive symptoms. The relationship between corruption and mental health was stronger for women, and poverty status had no heterogeneous effects. Overall, their findings suggest that efforts to reduce corruption and improve rural governance structures can bring significant psychosocial and mental health benefits.

The relationship between SWB as an indicator of happiness and corruption has also been the subject of many studies. Tay, Mitchel and Diener, Ed. (2014) studied corruption and SWB using representative data from 150 nations. The results of their study show that both individual and societal perceptions of corruption are detrimental to SWB. Qiang Li and Lian An (2020) also analyzed the impact of corruption on SWB using cross-national data for 126 countries. Their results show that if a government becomes ten points more corrupt, the national average of SWB will decrease by 0.23 points. Jiazheng Ma, Bin Guo and Yanghang Yu (2022) examined the relationship between corruption perception and satisfaction with government performance and SWB in China. According to the results obtained by analyzing the data of 3.033 Chinese participants, the perception of official corruption is negatively associated with SWB. In addition, satisfaction with government performance plays a mediating role in the relationship between official perception of corruption and SWB. Yan and Wen (2020) also analyzed data from the Chinese General Social Survey conducted in 2013, which included 11,151 samples. The results of the study show that income inequality and corruption in China significantly reduce Chinese residents' SWB. Another study examining the impact of corruption on the SWB of Chinese citizens was made by Yiping Wu and Jiangnan Zhu. Wu and Zhu (2016) investigated the effect of corruption on the SWB of Chinese citizens. They found that the experience of corruption tends to reduce happiness more severely when the external environment has a lower level of corruption. Sulemana (2015) examined the effect of corruption on SWB using micro-level data for 20 countries in Sub-Saharan Africa. His results indicate that perceived corruption diminishes SWB, and institutional trust mediates the relationship between corruption and SWB. He stated that the deleterious effect of corruption on SWB can be attenuated by increasing institutional trust.

The literature also includes studies on institutions concerning happiness. Muhammad H. Danish and Shahzada M. N. Nawaz (2022) analyzed the impact of institutional trust and governance on welfare, using data from 1,566 households in Pakistan. According to the results, if people do not perceive corruption in state and public institutions and trust the institutions, they tend to feel happier and more satisfied with their lives. Marco Ciziceno and Giovanni A. Travaglino (2019) investigated the role of institutional trust in mediating the link between perceived corruption and life satisfaction. The results of the analysis indicated that perceived corruption affects life satisfaction indirectly by undermining individuals' confidence in institutions. Christian Bjørnskov, Axel Dreher, and Justina A. V. Fischer (2010) examined the relationship between formal institutions and SWB. They found that the quality of formal institutions is positively associated with SWB. According to the results of their analysis, the effects of economic and judicial institutions on happiness dominate those of political institutions in low-income countries.

Many empirical studies on the “happiness gap” contain country examples. This happiness gap illustrates the difference in life satisfaction between country groups. In the literature, various studies on the happiness gap in Eastern Europe found that citizens in Eastern Europe are less satisfied with their lives than their peers in other countries. Simeon Djankova, Elena Nikolova, and Jan Zilinsky (2016) analyzed this issue and suggested that Eastern Europeans link their life satisfaction with higher perceived corruption and weaker government performance. According to their results, this happiness gap is associated with poor governance and related citizen perceptions. They used a series of multi-country surveys, covering 82 countries from the 1990s to 2014, and various measures of corruption and government effectiveness. Sergei Guriev and Ekaterina Zhuravskaya (2009) also found a statistically significant difference in life satisfaction between transition and non-transition countries that can be referred to as the happiness gap.

Chiara Amini and Elodie Douarin (2020) also investigated the relationship between SWB and corruption, using a sample of Eastern and Western European countries. Their findings show significant differences in SWB between Eastern and Western Europe. These differences are partly explained by aggregate corruption. They conclude that individual-level measures of both perceived and experienced corruption have a significant and negative impact on SWB. They found that corruption contributes to the creation of non-monetary inequality, which increases the differences in life satisfaction between the rich and the poor and between the educated and the less educated. According to the results of Amini and Douarin's study, evidence is limited that corruption is a social norm in Eastern Europe.

Andrés Rodríguez-Pose and Kristina Maslauskaite (2012) investigated whether the consistently low happiness levels of Central and Eastern European citizens were mainly due to some innate characteristics of the population or inadequate macroeconomic and institutional conditions. The results of the analysis indicated that the level of happiness is not specific to the geographical region. They stated that Central and Eastern Europeans are not innately different from their counterparts in the Western World. Individual factors contributing to life satisfaction agree with those found in similar studies conducted in other countries. While macroeconomic factors are important in the level of citizens’ happiness, they do not seem to be at the root of the low life satisfaction problem in the region. From a macroeconomic perspective, GDP growth is still considered a source of increased welfare, but its relationship with the level of happiness is gradually decreasing. The conclusion was that the differences in levels of individual happiness between Central and Eastern Europeans are mostly determined by institutional factors such as corruption, government spending and decentralization. Corruption was seen as a major source of unhappiness; in most of the countries in the region, a consistently high level of corruption led to a significant decline in life satisfaction during the period in question. Their analysis shows that lower levels of corruption will not only further boost GDP growth but will also significantly increase happiness levels.

While the extant literature has primarily focused on the effects of corruption on happiness, happiness may also indirectly influence corruption through various channels. Arvin and Lew (2014) employed a cross-country macro-level analysis

incorporating corruption and happiness into a "happiness production function" model. Their findings demonstrate that in high-income countries, increased levels of happiness may contribute to a reduction in corruption. Similarly, Li, Hui, Hanyu Xiao, and Ting Gong (2015) found that higher levels of subjective economic well-being positively influence individuals' perceptions of anti-corruption efforts. Luca Andriani and Gaygysyz Ashyrov (2022) investigated whether life satisfaction influences individuals' attitudes toward corruption. Their study, based on data from 28 post-socialist countries in Eastern Europe and Central Asia, found that individuals reporting higher life satisfaction exhibit a stronger aversion to corruption. Moreover, the findings suggest that increased institutional trust amplifies this aversion, particularly among those with the highest levels of life satisfaction. These results underscore the critical role of quality of life in fostering institutional compliance and loyalty. Relying on these findings, this study proposes that the potential effect of happiness on corruption may operate through the channels of trust and commitment. Within the broader concept of trust, institutional trust stands out as particularly influential in shaping attitudes toward corruption. Institutional trust encompasses confidence in both public authorities and government institutions. Similarly, different forms of commitment observed in society, such as institutional commitment, civic commitment, and legal commitment, may also play a role. In this context, happiness may influence corruption through individuals' commitment to public institutions (institutional commitment), adherence to legal rules and the rule of law (legal commitment), and engagement with democratic values and civic duties (civic commitment).

Another potential effect of happiness on corruption may stem from the tendency of happier individuals to become better citizens. Andriani and Ashyrov (2022) argue that a higher quality of life fosters better citizens who are more responsible, civically engaged, law-abiding, participatory, and conscious of public affairs. In line with this, Patrick Flavin and Michael J. Keane (2012) found that individuals with greater life satisfaction tend to exhibit higher levels of political participation, particularly through voting and similar political activities. Therefore, becoming "better citizens" may serve as a behavioral conduit through which happiness reduces tolerance for corruption.

Optimism bias constitutes another possible mechanism. This cognitive bias leads individuals to overestimate the likelihood of positive events and underestimate the likelihood of negative ones. As Tali Sharot (2011) explains, optimism bias can lead people to underestimate risks and exhibit greater tolerance for unethical practices. Happier individuals may thus view the future more optimistically, potentially downplaying the negative consequences of corrupt behavior.

Broader social networks may also play a role in the relationship between happiness and corruption. Helliwell and Putnam (2004) concluded in their study that social capital, measured by the strength of family, neighborhood, religious, and community ties, has a positive impact on SWB. The sources of social capital can be explained as generalized trust, access to and membership in various types of networks, and norms of reciprocity (Bo Rothstein and Dietlind Stolle, 2008).

Social capital develops in connection with formal political and legal institutions. Rothstein and Stolle (2008) argue that well-functioning, fair, and corruption-free institutions strengthen social trust among individuals. In this context, similar to the

trust channel mentioned earlier, broader social networks nurture social capital and may reduce tolerance toward corruption. However, the opposite outcome is also possible. In this regard, Alena V. Ledeneva (1998) suggests that broad social networks can facilitate citizens' access to public services through "informal means." Ledeneva explains that the practice known as "blat" represents a system in which social ties replace formal rules, thereby becoming a functional component of corruption. Therefore, through the broader social network channel, happiness may exert either a positive or negative influence on corruption.

Another potential channel is "moral intelligence." Bolanle Ogungbamila and Oluwaseyi Femi Ajayi (2024) found that individuals with higher levels of moral intelligence demonstrate lower tolerance for corruption. Furthermore, life satisfaction appears to strengthen this relationship. The study suggests that employees who are satisfied with their lives tend to be less tolerant of corruption, attributing this to the reinforcement of their current living conditions by their moral principles. Conversely, individuals with lower life satisfaction or weaker moral values may be more inclined to view corruption as an easy way to achieve personal goals and desires and therefore exhibit a greater tolerance toward it.

Changing risk preferences may also mediate the link between happiness and corruption. In their experimental studies, Alice M. Isen and Robert Patrick (1987) highlighted the complexity of the effects of positive emotions on actual risk-taking behavior. Similarly, Thomas E. Nygren et al. (1996) found that individuals experiencing positive affect tend to focus more on outcomes—particularly on avoiding losses—rather than on probability information when making decisions. This suggests that positive emotions may lead individuals to adopt a more cautious or loss-averse decision-making frame. In this context, depending on changing risk preferences under different conditions, corruption may either increase or decrease. For instance, individuals with high life satisfaction may experience lower risk perception, leading to lower levels of anxiety and perceived threat; this, in turn, may facilitate engagement in riskier behaviors and potentially increase corruption levels.

Happiness may also influence corruption due to less demand for social monitoring. Christian Bjørnskov (2007) found that higher levels of SWB are associated with increased trust in institutions. Individuals with high life satisfaction may reduce their demands for oversight and accountability because they are generally satisfied with the system. Elevated trust in the status quo can suppress critical engagement and reduce institutional scrutiny, thereby allowing corrupt practices.

Finally, happiness may affect corruption through "satisfaction with the status quo." William Samuelson and Richard Zeckhauser (1988) argue that individuals tend to resist change when they are satisfied with their current condition. This resistance can reinforce loyalty to existing systems, even when they are flawed or corrupt. In such contexts, happiness may contribute to a passive acceptance of corruption by diminishing the desire for systemic change.

In summary, Figure 1 illustrates the various channels through which happiness may influence corruption. These include trust and commitment, better citizenship, optimism bias, broader social networks, moral intelligence, changing risk preferences, reduced demand for monitoring, and satisfaction with the status quo. These interrelated

pathways reveal the complex and sometimes paradoxical ways in which happiness can shape corruption dynamics.

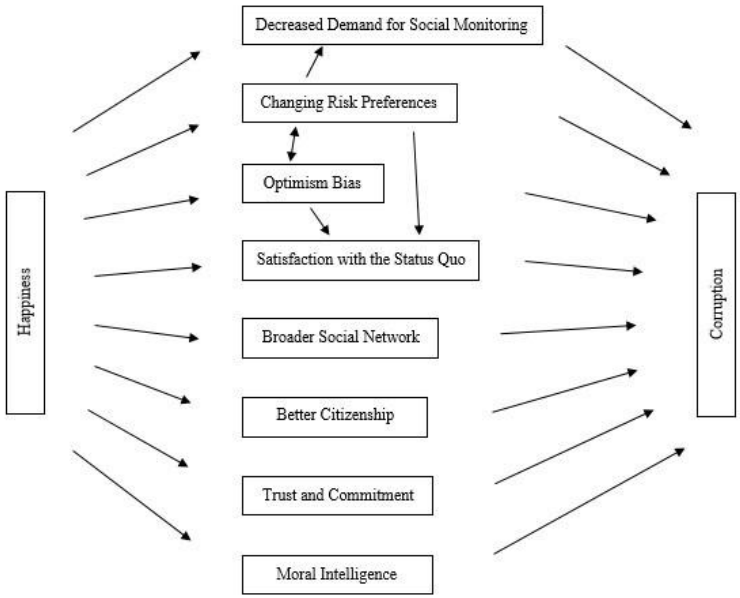

Figure 1 the Potential Channels Through Which Happiness May Cause Corruption

The table below presents academic studies from the last decade that investigate the relationship between corruption and happiness**.** In light of the review above, the literature on happiness is complex and somewhat ambiguous. The reason for this is that happiness is an abstract concept, and as such is difficult to define; it can be treated in various ways according to people's value judgments. The effect of corruption on macroeconomic indicators, such as growth, employment and income distribution, is a field that has been studied for many years. This study aims to determine the relationship between corruption and happiness. This relationship is important for revealing the potential social costs of corruption and for developing effective anti-corruption policies. Therefore, we suggest that this study will contribute to the relevant literature.

Table 1 A literature summary on corruption and happiness from the last decade

Author(s)	**Sample**	**Method**	**Findings**
Aslam et al. (2025)	57 countries' cross-sectional data	Structural Equation Modeling	Corruption affects happiness directly and indirectly through sociopolitical variables.

Oktafira et al. (2025)	G20 countries	Multiple Linear Regression	Income inequality, corruption perception, gender equality, and the use of technology significantly influence happiness levels.
Gillanders et al. (2025)	Africa, Latin America, Caribbean	Ordered Probit Model	Corruption negatively affects SWB beyond economic factors.
Yang and Xie (2025)	156 countries from 2020 to 2024	Machine Learning Clustering	Developed predictive models for global happiness, incorporating corruption indicators.
Fang (2024)	Cross-national data from 133 countries	Ordinary Least Squares	Corruption has a robust negative impact on happiness across different countries.
Behera et al. (2024)	166 countries, from 2005 to 2020	Panel Fixed Effects and Panel Quantile Regression	Socioeconomic factors play a significant role in determining variations in happiness levels between countries.
Ogungbamila and Ajayi (2024)	495 public sector employees in Nigeria	Survey and Hierarchical Multiple Regression Analyses	Moral intelligence reduces tolerance for corruption; life satisfaction moderates this relationship.
Carcaba et al. (2023)	Survey of individuals in Spain, 2013 and 2018	Clustered Error Regression Model	Political configuration influences SWB at the local level.
Shiroka-Pula et al. (2023)	Survey of individuals in 28 European countries	Multilevel Regression Model	Institutional quality positively correlates with SWB across Europe.
Andriani and Ashyrov (2022)	Third wave of the Life in Transition Survey, 2015–2016	Two-Stage Least Squares (2SLS)	As institutional trust increases, so does aversion to corruption.
Ahmadiani et al. (2022)	Last four waves of the World Values Survey	Ordinary Least Squares, Multilevel Regression, Dominance Analysis	Identifies key determinants of happiness, including governance and the perception of corruption.
Danish and Nawaz (2022)	The primary data of 1590 individuals in Pakistan	Ordered Logistic Regression, Generalized	Institutional trust and governance significantly impact multidimensional well-being.

		Structural Equation Model	
Ma et al. (2022)	Individuals Survey, 3033 individuals in China	Structural Equation Model	Perception of official corruption negatively affects SWB, mediated by satisfaction with government performance.
Kumari (2022)	21 Emerging market economies	Panel Corrected Standard Error Model	Socioeconomic conditions (such as corruption) significantly influence happiness levels in emerging markets.
Sharma et al. (2021)	Cross-sectional and panel surveys in Vietnam	Ordinary Least Squares, Fixed Effects Model	Corruption harms mental health, thus reducing overall happiness.
Achim and Bâtea (2021)	Survey of 101 individuals in Romania	Survey analysis	Corruption and the shadow economy reduce reported happiness levels.
Youssef and Diab (2021)	20 MENA countries over the 2007–2017	Panel Random-Effects Regression	The quality of governance explains differences in happiness levels across MENA countries.
Li and An (2020)	Cross-national for 126 countries	Ordinary Least Squares, Two-Stage Least Squares	Corruption negatively impacts happiness globally, confirming that corruption reduces SWB.
Remeikienė et al. (2020)	EU countries	Multiple Linear Regression	Corruption correlates negatively with quality of life indicators in the EU.
Amini and Douarin (2020)	The second wave of the Transition Survey	Multilevel Models	Corruption functions as a social norm in transition economies, affecting life satisfaction.
Berggren and Bjørnskov (2020)	113 studies	Review of Empirical Studies	Institutional quality is a strong predictor of life satisfaction across countries.
Yan and Wen (2020)	Chinese General Social Survey in 2013	Ordered Probit Model	Income inequality and corruption both negatively influence SWB.
Borlea et al. (2019)	Cross-country survey of 148 countries	Simple and Multiple Linear Regression, Correlation and ANOVA	Behavioral factors influence corruption tolerance, indirectly affecting well-being.

Ciziceno and Travaglino (2019)	251 individuals from the USA and 9,508 individuals from the MENA region	Mediation Analysis	Institutional trust mediates the relationship between perceived corruption and individuals' life satisfaction.
Satrovic et al. (2018)	Panel data from 59 countries from 2007 to 2016	Static And Dynamic Panel Data Models, Panel ARDL	Control of corruption positively correlates with increased happiness.
Zheng et al. (2017)	Survey of 179 Chinese adults, Experimental Study of 58 Chinese college students	Multiple Linear Regression	Life satisfaction buffers the negative effect of corruption perception on political participation.
Altindag and Xu (2017)	The first four waves of the World Values Survey	Ordered Probit Model	People with higher life satisfaction value institutional quality over economic growth.
Gonza and Burger (2017)	The first six European Social Surveys	Ordinary Least Squares, Ordered Logit Model	SWB was affected; mediating/moderating factors include trust and resilience.
Cheung and Lucas (2016)	1.7 million residents of the U.S	Multilevel Modeling	Higher income inequality amplifies the impact of relative income on life satisfaction.
Wu and Zhu (2016)	3183 people in 28 Chinese provincial units	Ordered Probit Model	Experienced corruption and poor environmental conditions reduce life satisfaction.
Sulemana (2015)	Micro-level data for 20 countries in Sub-Saharan Africa	Ordered Probit Model, Ordinary Least Squares	Perceptions of public corruption negatively affect SWB.
Li, Xiao, and Gong (2015)	Survey of individuals in China in 2011	Ordered Logistic Model	Subjective economic well-being causes a positive perception of anti-corruption efforts.
Sulemana et al. (2015)	Round 3 of the Afrobarameter Surveys	Ordered Probit Model, Ordinary Least Squares	Experienced corruption significantly lowers life satisfaction in African countries.

3. Data and Methodology

The essence here lies in exploring causal relations between social perceptions of happiness and social perceptions of corruption. The Life Ladder scale from the

World Happiness Report was used as the indicator of happiness. The World Happiness Report is released annually by Gallup World Poll. These reports present survey results and analyses of more than 150 countries. These surveys, which have the same content for all countries, capture responses by different methods, including telephone or face-to-face interviews. The number of people interviewed usually exceeds 1,000. The Sustainable Development Solutions Network, assigned by the General Secretariat of the United Nations, use the World Happiness Report as the basic survey for global happiness levels. The following question is asked during the interviews to reveal happiness levels:

"Imagine a ladder with the lowest step numbered as 0 and the highest one as 10. The lowest step represents the possible worst life level for you, whereas the highest one represents the possible best life level. When you look at your own life, at which step of the ladder do you feel yourself personally?"

The average of the answers given to questions for each country is used as the average happiness perception score of that country.†

As discussed above, corruption indices have been developed by national and international organizations and associations to measure corruption. Transparency International's CPI is used in this study to measure perception of corruption. As mentioned earlier, CPI is considered one of the most reliable indices of its type in the world. Different data sources from different regions are used to construct this index. For example, the following 13 data resources were used to form the CPI in 2021:

- African Development Bank Country Policy and Institutional Assessment, 2020
- Bertelsmann Stiftung Sustainable Governance Indicators, 2020
- Bertelsmann Stiftung Transformation Index, 2022
- Economist Intelligence Unit Country Risk Service, 2021
- Freedom House Nations in Transit, 2021
- Global Insight Country Risk Ratings, 2020
- IMD World Competitiveness Center World Competitiveness Yearbook Executive Opinion Survey, 2021
- Political and Economic Risk Consultancy Asian Intelligence, 2021
- The PRS Group International Country Risk Guide 2021
- World Bank - Country Policy and Institutional Assessment, 2020
- World Economic Forum Executive Opinion Survey, 2020
- World Justice Project Rule of Law Index Expert Survey, 2020
- Varieties of Democracy (V-Dem v. 11), 2021

A country must have data from at least three different data sources to be included in the analysis. The data collected from these sources are converted into a standardized scale from 0 to 100. According to this scale, "0" represents the highest

† http://worldhappiness.report/

possible perception of corruption while "100" represents the lowest. That is, the higher the CPI score, the lower the corruption perception. ‡

The study also includes macroeconomic control variables selected based on the literature on happiness and corruption. The annual growth of GDP per capita (**GDP**), the unemployment rate as a percentage of total labor force (**Unemp**) and the inflation rate (**Inf**) calculated as the GDP deflator are used as control variables. Data on these variables were obtained from the World Bank database.

The CPI index has been released every year since 1995. However, the World Happiness Report is a more recent development, first released in 2012, and the Life Ladder data have been available regularly since 2005. For this reason, this analysis includes countries and periods for which both corruption and happiness data were regularly available. The sample involves 81 countries, including Türkiye, for the years 2010-2023. In this way, a large heterogeneous dataset was examined to obtain an overall worldwide evaluation. Firstly, panel Granger causality analysis was performed for all countries. Then, the heterogeneous dataset was divided into homogeneous subgroups of developing and developed countries for further analysis. This classification is based on the IMF classification of Emerging and Developing Economies - Advanced Economies. While 55 of the 81 countries in the study belong to the developing economies group, 26 belong to the advanced economies group. Panel causality analysis was repeated for each group, and the results were compared.

Panel causality analysis was employed to examine the relationship between happiness and perception of corruption. Panel causality analysis employs Granger causality as a basis for investigating time-series causality. Here, to compare the causality between two variables, each variable is modeled over the lags of both variables. Unlike time-series causality, the heterogeneity condition of units in the panel data should be considered. Hurlin (2004) proposed a model applicable to panel causality analysis by calculating the heterogeneity between these units. The model is as follows:

$$y_{it} = \alpha_i + \sum_{k=1}^{K} \gamma_i^{(k)} y_{it-k} + \sum_{k=1}^{K} \beta_i^{(k)} x_{it-k} + \varepsilon_{it}$$

Here α_i shows fixed effects for units**.** K is an appropriate lag length. To determine if x variable Granger-causes the variable y, an F Test is applied to the β coefficients. The null hypothesis defines no causality, whereas the alternative hypothesis defines causality for some units. Then, heterogeneity between the units needs to be considered. The precondition is that the variables analyzed are stable (Burak Güriş, 2015).

‡ https://www.transparency.org/en/cpi/

4. Findings

Table 2 presents descriptive statistics for happiness and corruption perceptions. The average CPI value is 47.36, while the average of the Life Ladder variable is 5.76. The wide range between the highest perceived level of corruption (min CPI = 16) and the lowest perceived level of corruption (max CPI = 95) is due to the heterogeneous panel data structure.

Table 2 Descriptive statistics

Variable	Observation	Average	Std Dev	Min	Max
CPI	1134	47.36	19.13	16	95
Life Ladder	1134	5.76	1.04	2.18	7.89

The stability of the variables needs to be examined before causality analysis. The suitable unit root test for panel data depends on whether significant cross-sectional correlation is present. Table 3 gives the results of Pesaran's Test of Cross-Sectional Independence.

Table 3 Pesaran's test of cross sectional independence

CPI	=	20.08	Prob =	0.0000
Life Ladder	=	4.50	Prob =	0.0000
Gdp	=	109.68	Prob =	0.0000
Unemp	=	26.34	Prob =	0.0000
Inf	=	60.63	Prob =	0.0000

For all variables, Pesaran's P = 0.000<0.05; thus, the null hypothesis, which defines the absence of cross-sectional correlation, has been rejected. Proceeding next to unit root analysis, second-generation unit root tests must be applied due to cross-sectional correlation with the variables. Therefore, the Pesaran CIPS test was used to test the stationarity of the variables. Table 4 presents the test results.

Table 4 Unit root test results

Variable	CIPS	Stationarity
CPI	-2.343	Has a unit root
d_CPI	-3.318***	Stationary
Life Ladder	-2.863***	Stationary
GDP	-2.70**	Stationary
Unemp	-2.195	Has a unit root
d_Unemp	-2.908***	Stationary
Inf	-2.67**	Stationary

Note: *, **, and *** denote 10%, 5% and 1% significance level, respectively.

The test results in Table 4 indicate that the null hypothesis, which expresses the presence of a unit root, is rejected for the Life Ladder, GDP and Inf variables. These variables are stationary at the level, [I(0)]. However, the hypothesis cannot be rejected at the level but is rejected at the first difference for CPI and Unemp variables (d_CPI and d_Unemp, respectively). These variables are stationary in the first difference and are included in the analysis as differenced, [I(1)].

Next, information criteria have been examined to determine a suitable lag length for Granger causality analysis. Table 5 presents the results.

Table 5 Lag length selection using information criteria

lag	MBIC	MAIC	MQIC
1	**-448.60**	**-99.30**	**-239.99**
2	-333.36	-71.38	-176.91
3	-251.64	-76.98	-147.33
4	-130.26	-42.94	-78.11

According to the results in Table 5, the most suitable lag length based on the information criteria is 1. Therefore, among the variables, Granger causation has been operationalized with a lag length of 1. Table 6 presents the causality analysis results.

Table 6 Granger causality test results

Null hypothesis:	chi2	Prob > chi2
d_CPI does not Granger-cause Life Ladder	22.533	**0.000**
GDP does not Granger-cause Life Ladder	8.735	**0.003**
d_Unemp does not Granger-cause Life Ladder	12.592	**0.000**
Inf does not Granger-cause Life Ladder	2.307	0.129
Life Ladder does not Granger-cause d_CPI	0.480	0.488
GDP does not Granger-cause d_CPI	7.168	**0.007**
d_Unemp does not Granger-cause d_CPI	12.877	**0.000**
Inf does not Granger-cause d_CPI	1.373	0.241

The test results for Life Ladder show that the null hypothesis is rejected for all variables except Inf. Accordingly, there is a causality from the perception of corruption, economic growth and unemployment to the perception of happiness, but not from inflation.

On the other hand, analysis of the results for d_CPI found that the null hypothesis is rejected for GDP and d_Unemp, but not for Life Ladder and Inf. Accordingly, there is a causality from economic growth and unemployment to the perception of corruption, but not from the perception of happiness and inflation. In

general, there is a unidirectional causality from the perception of corruption to the perception of happiness.

In the next step, the heterogeneous panel structure is divided into homogeneous subgroups of developing and developed countries for further analysis. This classification is based on the classification of the IMF. While 55 of the 81 countries in the study belong to the developing economies group, 26 belong to the advanced economies group. For the developing economies, an appropriate lag selection was made for causality analysis. Table 7 presents the results.

Table 7 Lag length selection for the developing economies

lag	MBIC	MAIC	MQIC
1	**-416.67**	**-106.07**	**-232.16**
2	-316.77	-83.82	-178.38
3	-225.72	-70.42	-133.46
4	-110.33	-32.68	-64.20

According to the results presented in Table 7, the most suitable lag length based on the information criteria is 1. Therefore, among the variables, Granger causality has been operationalized with a lag length of 1. Table 8 presents the causality analysis results for the developing economies.

Table 8 Granger causality test results for the developing economies

Null hypothesis:	chi2	Prob > chi2
d_CPI does not Granger-cause Life Ladder	17.307	**0.000**
GDP does not Granger-cause Life Ladder	11.192	**0.001**
d_Unemp does not Granger-cause Life Ladder	11.718	**0.001**
Inf does not Granger-cause Life Ladder	3.803	0.051
Life Ladder does not Granger-cause d_CPI	17.208	**0.000**
GDP does not Granger-cause d_CPI	29.295	**0.000**
d_Unemp does not Granger-cause d_CPI	12.320	**0.000**
Inf does not Granger-cause d_CPI	8.575	**0.003**

The test results for Life Ladder show that the null hypothesis is rejected for all variables except Inf. Accordingly, there is a causality from the perception of corruption, economic growth and unemployment to the perception of happiness, but not from inflation. This result aligns with the results obtained for all countries.

On the other hand, analysis of the results for d_CPI found that the null hypothesis is rejected for all variables. Accordingly, there is a causality from perception of happiness, economic growth, unemployment and inflation to the

perception of corruption. In contrast to the unidirectional causality obtained for all countries, there is a bidirectional interaction between perceptions of corruption and happiness for the developing economies.

In the next step, Granger causality analysis is performed for the advanced economies group. For this purpose, the appropriate lag length was first determined by the information criteria. Table 9 presents the results.

Table 9 Lag length selection for the advanced economies

lag	MBIC	MAIC	MQIC
1	**-195.95**	**-61.62**	**-115.40**
2	-130.06	-42.86	-77.77
3	-51.09	-11.02	-27.06
4	-28.71	-12.22	-18.82

According to the results in Table 9, the most suitable lag length based on the information criteria is 1. Therefore, among the variables, Granger causality has been operationalized with a lag length of 1. Table 10 presents the causality analysis results for the advanced economies.

Table 10 Granger causality test results for the advanced economies

Null hypothesis:	chi2	Prob > chi2
d_CPI does not Granger-cause Life Ladder	2.687	0.101
GDP does not Granger-cause Life Ladder	2.288	0.130
d_Unemp does not Granger-cause Life Ladder	6.674	**0.010**
Inf does not Granger-cause Life Ladder	0.021	0.884
Life Ladder does not Granger-cause d_CPI	0.237	0.627
GDP does not Granger-cause d_CPI	0.968	0.325
d_Unemp does not Granger-cause d_CPI	0.705	0.401
Inf does not Granger-cause d_CPI	3.424	0.064

The test results for Life Ladder show that the null hypothesis cannot be rejected for any variable except d_Unemp. Accordingly, the only causal relationship is from unemployment to the perception of happiness among the variables analyzed for the advanced economies. On the other hand, analysis of the test results for d_CPI found that the null hypothesis cannot be rejected for any variable. Accordingly, no causal relationship exists between the variables analyzed and the perception of corruption in advanced economies.

This bidirectional relationship between perceptions of happiness and corruption in developing countries does not exist in developed countries. When analyzed for all

countries, this relationship is found to be unidirectional. This suggests that the results for large groups with heterogeneous structures may differ from homogeneous subgroups. Thus, the level of development of countries should be considered when analyzing the relationship between perceptions of happiness and corruption. Moreover, the unidirectional relationship obtained for all countries is mostly driven by developing countries.

In addition, while macroeconomic variables are generally associated with both perceptions of happiness and corruption in developing countries, this does not hold for developed countries. Thus, when analyzing the effects of macroeconomic variables on both happiness and corruption, the level of development of countries must be considered. For example, while the median CPI value for all countries analyzed is 41, this value is 36 for developing countries and 70 for developed countries. This indicates that the perception of corruption in developed countries is considerably lower than in developing countries. Therefore, macroeconomic conditions play a determining role in the perception of corruption in developing countries, but not in developed countries. A similar interpretation can be made for the perception of happiness, but the unemployment rate has an effect in all cases.

5. Conclusion

The causes, impacts, and countermeasures related to corruption are among the policy priorities for national governments, public institutions, and international organizations. Although corruption is difficult to measure due to its covert nature and confidentiality concerns, national and international organizations measure the perception of corruption in society using various questionnaires. Corruption and efforts to combat it are becoming increasingly important for both developed and developing countries. The broad consensus is that corruption, as a global problem, disrupts macroeconomic balance and has a severely negative impact on the economy. The literature generally focuses on the economic effects and costs of corruption. In addition to these, corruption has political, environmental and social impacts. As a result of corruption, social cohesion may deteriorate while certain groups gain economic advantages. Corruption can distort the allocation of income and resources, undermining justice and democracy by weakening the economic and institutional structures. In this context, corruption is a crucial and problematic issue that disrupts the efficient allocation of resources of the market economy and the financial balance of the public economy.

Research on happiness has gained importance in recent years. In these studies, happiness has increasingly been treated as an economic concept by considering the connections between happiness and the economy. The impact of individuals' economic conditions and the effects of countries' economic structures on social happiness levels are among the analysis topics in this field. In this respect, corruption is viewed in the context of the economy and happiness, as it may impact the happiness level of people who constitute a society. The perception of corruption, particularly in the public sector, negatively affects individuals' life satisfaction and gives rise to concerns

about the country's current and future situation. The concept of happiness levels has become closely associated with the policies of governments and the public economy. In designing policies for the public economy, identifying the values that make individuals in society happy has become a priority for achieving successful results. In addition to the change in economic and political conditions from the past to the present, important changes have occurred in the structure of society. As the social needs of society increase, the social services the state provides must also increase. As living standards rise, public expectations regarding the quantity and quality of services also increase. In this context, government policies should aim to raise the level of happiness to meet social needs and improve the welfare of society. The goods and services offered by the public sector and the public practices performed help determine the happiness levels of societies. Activities carried out within the scope of the public sector may either enhance or undesirably reduce the happiness of individuals and society. In this context, the phenomenon of corruption, which can be considered a public evil, may mean public sector activities have undesirable consequences for individuals, society and the country's economy.

This study analyzed the relationship between subjective perceptions of corruption and subjective perceptions of happiness. The variables were selected from publicly available indices that have previously been used for various purposes in different domains. The selected happiness and corruption variables were subjected to panel Granger causality analysis by considering the macroeconomic control variables. These control variables are economic growth per capita, unemployment rate, and inflation rate. Causality analysis was first conducted for a heterogeneous panel dataset that includes a large group of countries. As a result, a causal relation was identified from perception of corruption toward perception of happiness. Studies show that economic growth and unemployment rate are also related to both happiness and perceptions of corruption.

For a more detailed review, causality analyses were repeated separately for developing and advanced economies. While there is a bidirectional causality between happiness and corruption perceptions in developing countries, no causal relationship has been identified in developed countries. These results suggest that a country's level of development should be considered when examining the relationship between happiness and corruption. The unidirectional relationship found for all countries is largely due to the developing countries. In fact, while the relationship between macroeconomic variables and perceptions of happiness and corruption is present in developing countries, this is not the case in developed countries, except for the unemployment rate. The most likely explanation for this situation lies in the significantly lower perception of corruption in developed countries compared to developing countries.

A limited number of studies in the literature analyze the relationship between corruption and well-being across countries with different levels of economic development. This study aims to contribute to filling this gap by providing empirical evidence on how corruption influences well-being in developing and advanced economies. Kumari et al. (2022) found that corruption reduces well-being in emerging market economies, and our findings for developing countries are consistent with their

results. Similarly, Behera et al. (2024) examined the relationship between corruption and happiness by treating happiness as a socioeconomic factor in both developed and developing countries. They found that corruption has a significant negative effect on happiness in developing countries, whereas the effect is statistically insignificant in developed countries. Our findings align with those of Behera et al. and are supported by similar evidence in the literature. Moreover, Oktafira et al. (2025), in their study on G20 countries, report that a decline in perceived corruption exerts a partially positive and statistically significant effect on well-being. These findings collectively suggest that while corruption negatively affects well-being, the magnitude and significance of this relationship may vary depending on a country's level of economic development. Despite these contributions, the literature has yet to reach a consensus on how corruption impacts well-being across different economic contexts. Our study, therefore, adds value by offering further empirical insight into this ongoing debate. The principal limitation of this study is that while examining the causal relationship between corruption and perceptions of happiness, the magnitude of this relationship has not been focused on. The quantitative magnitude of direct or indirect relationships between variables is a topic for further research and analysis.

Reducing corruption in developing countries plays a significant role in improving the well-being of both individuals and society. Corruption is a critical issue, particularly for public economics. Recognizing the relationship between corruption and happiness is essential in accurately assessing the cost of corruption. In this context, the comprehensive dataset in this study has revealed the relationship between corruption and happiness. The study provides a comprehensive framework for future research exploring the relationship between corruption and happiness.

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