

Tourism and income inequality

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Yogeeswari Subramaniam

*Azman Hashim International Business School, Universiti Teknologi Malaysia,
Skudai, Malaysia*

Tajul Ariffin Masron

School of Management, Universiti Sains Malaysia, Penang, Malaysia, and

Nanthakumar Loganathan

*Azman Hashim International Business School, Universiti Teknologi Malaysia,
Skudai, Malaysia*

181

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Abstract

Purpose – Tourism has grown to be one of the world's largest and fastest-growing economic industries. Tourism development is viewed as a tool to improve income distribution as it allows people at the bottom of the pyramid to get involved in the industry. This study aims to examine the impact of tourism on income inequality in the top income equality countries.

Design/methodology/approach – The paper employs fully modified ordinary least squares (FMOLS) and dynamic ordinary least squares techniques to investigate the dynamic impact of tourism on income inequality in the world's most income equality countries, from 2001 to 2016.

Findings – The result shows that tourism is one of the major drivers of income equality. Thus, tourism can be used to reduce a country's income disparity.

Practical implications – As a result, policymakers should support the tourism industry to reduce income disparity and enhance income distribution.

Originality/value – Given the conflicting findings in the literature, this study reexamines this link and attempts to backwardly assess if the top equal-income countries in the world are heavily dependent on tourism.

Keywords Tourism, Income inequality, Panel dynamic model, Fully modified ordinary least squares (FMOLS), Dynamic ordinary least squares (DOLS)

Paper type Research paper

1. Introduction

Despite several years of progress, income inequality remains a concern. It declined significantly in the first half of the twentieth century, but has been steadily rising in the majority of the world's countries since the early 1980s (Roser and Ortiz-Ospina, 2016). More specifically, income inequality has increased dramatically in North America, the Middle East, sub-Saharan Africa, Brazil and Asia, whereas it has grown moderately in Europe (Alvaredo *et al.*, 2018). It has increased at varied rates in almost all countries, with the top 10%

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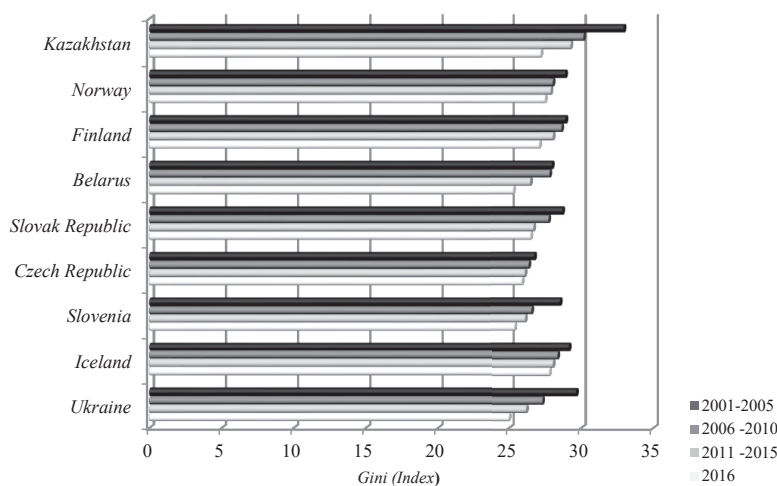


accounting for 37% of national income in Europe, 41% in China, 46% in Russia, 47% in the United States and Canada and around 55% in sub-Saharan Africa, Brazil and India (Alvaredo *et al.*, 2018). This rise in inequality is widening the gap between the rich and poor, resulting in lower per capita income for the poor and an inability to eliminate, or even reduce, poverty rates. As a result, it limits the opportunities of poorer people and, over time, has difficulties in maintaining social stability and economic prosperity. Hence, without a significant reduction in inequality, the world will fall short of its aim of ending extreme poverty by 2030.

Accordingly, there is a growing consensus that assessments of countries' economic conditions should focus not solely on income growth, but also on income distribution. Reducing income inequality is an essential goal for each country seeking sustainable development, and addressing these disparities will be each country's greatest challenge. According to previous studies, there are several ways to reduce the rising inequality in all countries such as taxes, money transfers (i.e. gifts or subsidies), regulation and education (Gupta *et al.*, 2002; Panizza, 2002; Calderón and Chong, 2009; Abdullah *et al.*, 2015; Krieger and Meierrieks, 2016; Biswas *et al.*, 2017). Taxes and transfers contributed greatly to the lowering of income inequality by raising tax rates on high-wage workers and providing cash and social transfers to those in need (Biswas *et al.*, 2017). The combination of taxes and transfers plays a major role in narrowing the income inequalities gap. It has been proven in OECD countries, where income inequality after taxes and transfers was approximately 25% lower than before taxes and transfers in the late 2000s (OECD, 2011). Cash transfers such as pensions, employment and social security reduce inequality by one-third across OECD countries (OECD, 2011). Besides, there is also potential to equalize income distribution by promoting equal access to education. According to the World Bank report, increasing education from generation to generation can result in a reduction in income inequality (World Bank, 2018b). This is because education increases people's opportunities to learn and improves the relevant skills of the poor. Therefore, it seems that promoting equal opportunities in education can support countries in fostering more equitable income distribution.

Apart from the above-mentioned channels, tourism can also offer a direct solution to the poor. Nowadays, tourism is recognized as a strategy for economic development, contributing to increasing income, leveraging human capital and improving the livelihoods of the local community (Cárdenas-García *et al.*, 2015; Du *et al.*, 2016). When the tourism sector is properly planned and managed, it can stimulate income growth and government tax revenues in host countries. From 2010 to 2015, the tourism sector grew by 25%, outperforming the automotive manufacturing (22%), food (19%) and chemical (9%) sectors, and it accounted for 10% of GDP, 7% of international trade and 30% of the world services exports (World Travel and Tourism Council, 2019). Moreover, the United Nations designated 2017 as the International Year of Sustainable Tourism to ensure that the Sustainable Development Goals and the 2030 Agenda for Sustainable Development are met (United Nations Climate Change, 2017). Indirectly, tourism is considered to be a powerful and effective tool for bringing tremendous benefits to economies, societies and communities. In this context, tourism can be a tool for reducing income disparity in a country. It can contribute to better opportunities and better lives by creating jobs and opportunities for businesses and by contributing to the production of tourism services and goods. For example, the pro-poor tourism approach could have positive effects on income equality by generating economic, social and environmental benefits for the poor, resulting in a more inclusive and prosperous society (Incera and Fernández, 2015; Bakker and Messerli, 2017). Pro-poor tourism typically focuses on unlocking opportunities for the poor rather than expanding the size of the sector and has progressed toward reducing inequality.

According to Figure 1, Ukraine, Iceland, Slovenia, Czech Republic, Slovak Republic, Belarus, Finland, Kazakhstan and Norway are ranked as the most equal countries in the world, based on the World Bank's Gini index. The Gini index, as a measure of the income distribution, indicates a slight decline in income inequality from 2001 to 2016, suggesting a



Notes(s): The choice of the most equal countries is defined as countries with recent experience of slow economic growth compared to other developed countries, but shows a large decline in inequality (Cingano, 2014; Bertola, 2018)

Source(s): World Bank (2018b)

Figure 1.
Gini index of the most
equal-income
distribution countries
in the world

trend toward greater income equality. Interestingly, the top nine nations are classified into one regional group, namely the European subregion. Thus, the question is what drives these countries toward achieving a lower level of income inequality. According to recent research by International Monetary Fund (IMF) on income inequality, the level of income inequality in Europe has remained stable at the aggregate level since those countries operate on a welfare model. The welfare model refers to a concept in which the government gives free social services such as medical care, financial aid, unemployment insurance and education to its citizens. For instance, Finland is situated in Northern Europe and provides free basic services to its citizens such as health care, insurance, education and water supply to support their social welfare and living standards. Likewise, Norway is designated as a welfare state with free health care and education services for its citizens and is among the countries with the most equal income distribution. Thus, the welfare state in these countries plays an important role in reducing income inequality, by equalizing opportunities, wealth distribution, income and public accountability for people who cannot afford the bare necessities of life. While acknowledging the positive effect of the welfare state on income inequality, it is worth noting that European countries dominate the list of the world's most visited countries. Europe is a fascinating region that attracts millions of tourists each year as compared to the Americas, Africa and Asia regions. Tourism has the potential to contribute significantly to regional and national growth while also diversifying national economic activities. An increase in tourism activity leads to economic growth via foreign exchange gains, the creation of new tourism-related business opportunities and an increase in tax revenues. These findings may suggest that countries with higher tourist arrivals have a more equitable income distribution. Accordingly, the question of whether tourism is a viable approach to improving income distribution arises. Thus, the research aims to investigate the impact of tourism on income inequality in the top income equality countries.

To the best of our knowledge, this study attempts to look at the countries with the most equal-income distribution, as well as those with a high entry of foreign tourists. This may provide scholars and practitioners with insights into how tourism development affects income inequality in countries with high tourist arrivals. In other words, the findings of this study may help policymakers in making future decisions about reducing income inequality, which may lead not only to more equality but also to a more robust tourism industry. As a result, the current study's findings are likely to be reliable and provide valuable policy implications on income inequality issues.

The remainder of this paper is organized as follows. [Section 2](#) outlines the literature review and [Section 3](#) explains the panel data regression model. [Section 4](#) presents and discusses the empirical results, and, finally, [Section 5](#) concludes.

2. Literature review

Several studies investigated the impact of income, inflation, corruption and foreign direct investment on income inequality under the framework of the so-called Kuznets curve hypothesis ([Kuznets, 1955](#)). The Kuznets curve postulates an inverted-U curve relationship between income and income inequality, implying that income raises income inequality during the early stages of economic development. However, it may reduce income inequality when the economy grows. In this context, many theoretical and empirical studies were conducted to examine the Kuznets curve hypothesis such as [Lewis \(1954\)](#), [Pasinetti \(1962\)](#), [Kuznets \(1955\)](#), [Shahbaz \(2010\)](#), [Shin \(2012\)](#), [Tiwari *et al.* \(2013\)](#), [Rose and Viju \(2014\)](#), [Batabyal and Chowdhury \(2015\)](#), [Le *et al.* \(2020\)](#), [Canh *et al.* \(2020\)](#), [Ghosh and Mitra \(2021\)](#), [Huynh \(2022\)](#) and [Ali *et al.* \(2022\)](#).

[Shahbaz \(2010\)](#), [Tiwari *et al.* \(2013\)](#), [Rose and Viju \(2014\)](#), [Batabyal and Chowdhury \(2015\)](#) and [Shin \(2012\)](#) corroborated the evidence of the Kuznets curve in Pakistan, India, Central and Eastern European countries, Commonwealth countries and global countries, respectively. These studies found that once a country achieves a certain level of economic growth, income has a negative impact on income inequality. The negative impact might be explained by the level of industrialization and infrastructure achievement. For instance, an increase in industrialization and infrastructure achievement is generally accompanied by an increase in job opportunities and employment. As a result, poverty will be reduced, while income inequality will worsen. However, [Anand and Kanbur \(1993\)](#), [Deininger and Squire \(1998\)](#), [Schultz \(1998\)](#) and [Acemoglu and Robinson \(2002\)](#) failed to support the existence of the Kuznets curve. This implies that the Kuznets curve is more prevalent in developed countries than in developing countries. Thus, this study hypothesizes the presence of a significant impact of income on income inequality.

Furthermore, corruption does not only undermine economic development but also has an impact on the level of social development. This is partly because corruption is a major impediment to progress and prosperity for people, especially the poor, minorities and women. In this context, [Gupta *et al.* \(2002\)](#), [Gyimah-Brempong \(2002\)](#), [Apergis *et al.* \(2010\)](#), [Dincer and Gunalp \(2012\)](#), [Batabyal and Chowdhury \(2015\)](#), [Pi and Zhou \(2015\)](#), [Cooray and Schneider \(2016\)](#), [Sulemana and Kpienbaareh \(2018\)](#), [Keneck-Massil *et al.* \(2021\)](#), [Khan \(2021\)](#), [Jonathan Gimba *et al.* \(2021\)](#) and [Khan *et al.* \(2022\)](#), among others, argued that higher corruption will worsen the income distribution for two reasons. First, evidence suggests that corruption inhibits poverty reduction by slowing growth and thereby widening the gap between rich and poor. Second, increased corruption can exacerbate income inequality by distorting the government's role in resource allocation. Such distortions in government engagement will hinder the poor's ability to invest or borrow while favoring the wealthy population. Corruption, for example, can lead to poor tax administration and tax evasion, disproportionately favoring the wealthy population and decreasing the progressiveness of the tax scheme, leading to increased income inequality. In the same vein, previous studies suggested that countries with a high level of corruption tend to have unequal distribution of income.

Over the last few decades, several studies identified tourism as one of the key contributors to economic growth through higher tax revenues, foreign currency gains and international investment. Given the importance of tourism, several studies including those by [Bartik \(1991\)](#), [Papatheodorou \(2004\)](#), [Schilcher \(2007\)](#), [Tosun *et al.* \(2003\)](#), [Lee and O'Leary \(2008\)](#), [Scheyvens and Momsen \(2008\)](#), [Lee \(2009\)](#), [Muchapondwa and Stage \(2013\)](#), [Incera and Fernández \(2015\)](#), [Raza and Shah \(2017\)](#), [Li *et al.* \(2016\)](#), [Li *et al.* \(2015\)](#), [Fang *et al.* \(2021\)](#), [Zhang \(2021\)](#), [Ghosh and Mitra \(2021\)](#), [Odhiambo \(2022\)](#) and [Sudsawasd *et al.* \(2022\)](#) examined its impact on income disparity. According to these studies, tourism has both detrimental and beneficial effects on a country's income inequality. On the one hand, empirical studies such as those conducted by [Bartik \(1991\)](#), [Papatheodorou \(2004\)](#), [Schilcher \(2007\)](#), [Tosun *et al.* \(2003\)](#), [Lee and O'Leary \(2008\)](#), [Scheyvens and Momsen \(2008\)](#), [Lee \(2009\)](#), [Muchapondwa and Stage \(2013\)](#) and [Zhang \(2021\)](#) demonstrated that growth in tourism increases income inequality. Using time series data, [Bartik \(1991\)](#) investigated the effect of tourism on income inequality and found that tourism boosts domestic economic activity, and consequently faster economic growth intensifies the distribution of domestic income. This is because of growing economic growth, which leads to higher inflation and property values. On the other hand, some studies such as [Incera and Fernández \(2015\)](#), [Raza and Shah \(2017\)](#), [Li *et al.* \(2016\)](#), [Li *et al.* \(2015\)](#), [Fang *et al.* \(2021\)](#), [Ghosh and Mitra \(2021\)](#), [Odhiambo \(2022\)](#) and [Sudsawasd *et al.* \(2022\)](#) found that tourism development reduces poverty and hence increases income distribution. This is mainly because pro-poor tourism serves to alleviate income inequality by giving a net benefit to the poor. A pro-poor tourism approach is likely to increase opportunities, generate employment and help the most vulnerable groups by making them involved in the production of tourism-related goods and services. Hence, tourism can be used to achieve equitable distribution of income such as [Incera and Fernández \(2015\)](#) for developed countries, [Alam and Paramati \(2016\)](#) for developing countries, [Raza and Shah \(2017\)](#) for top tourist arrival countries and [Li *et al.* \(2015, 2016\)](#) for China. Although several empirical studies tackled the relationship between tourism and income inequality in the United States, China and developed and developing countries, the relationship remains ambiguous in the rest of the world, requiring further empirical research. Given the ambivalent nature of the literature's findings, this study reexamines this relationship and attempts to backwardly ascertain whether countries with more equitable income distribution in the world are heavily supported by tourism. Three factors influence the countries' selection. First, studies on the top income equality countries may provide a more accurate picture of the importance of tourism in explaining the linkage in these countries than in other groups of countries. Second, as compared to developed nations, these countries encountered moderate economic growth, with a substantial decrease in income disparities. Third, these countries have a high number of foreign tourists.

Additionally, the relevant implications of this paper are as follows: (1) this study examines the presence of the Kuznets curve using multicountry data set for European countries [1], (2) the econometric techniques of fully modified ordinary least squares (FMOLS) and dynamic ordinary least squares (DOLS) are used to examine the dynamic implication of tourism on income inequality in the world's most equal income nations and (3) this paper explores the dynamic linkages among these variables not just for a panel of countries but also for a single country.

3. Methodology

Following [Kuznets \(1955\)](#), [Shahbaz \(2010\)](#), [Shin \(2012\)](#), [Tiwari *et al.* \(2013\)](#), [Rose and Viju \(2014\)](#) and [Batabyal and Chowdhury \(2015\)](#), a general specification of the Kuznets equation can be set as follows:

$$IE_{it} = (Y_{it}, Y_{it}^2) \tag{1}$$

In this equation, IE stands for income inequality, and Y and Y^2 represent income and income square, respectively. We also included a measure of corruption (CORR) as a control variable to the basic and general framework. In addition, to examine our central hypothesis that tourism can be a potential determinant of income inequality, we extended Eq. (1) by incorporating a measure of tourism (TOU) as follows:

$$IE_{it} = (Y_{it}, Y_{it}^2, CORR_{it}, TOU_{it}) \tag{2}$$

Eq. (2) can be parameterized as follows:

$$IE_{it} = Y_{it}^{\beta_1}, Y_{it}^{2\beta_2}, CORR_{it}^{\beta_3}, TOU_{it}^{\beta_4} \tag{3}$$

Then, Eq. (3) was transformed into its logarithmic form, where ε_{it} is the standard error and the prefix \ln represents the natural logarithm. Eq. (4) can be rewritten as

$$\ln IE_{it} = \beta_0 + \beta_1 \ln Y_{it} + \beta_2 \ln Y_{it}^2 + \beta_3 \ln CORR_{it} + \beta_4 \ln TOU_{it} + \varepsilon_{it} \tag{4}$$

where subscripts i and t refer to countries and years, respectively, ε_t denotes the model's error term and other variables were transformed in natural logs. Accordingly, the presence of Kuznets is confirmed by β_1 being significantly positive and β_2 being significantly negative. β_3 is also expected to be positive since a higher rate of corruption tends to lead to more unequal income distributions, while the focal parameter β_4 is expected to have a significant influence on income inequality.

Furthermore, panel estimating methodologies were employed to investigate the presence of a long-term relationship between income inequality, income, inflation, corruption and tourism. First, it is necessary to determine whether the dependent and independent variables evolve as unit root processes to investigate the possibility of a panel cointegration. In this study, the order of variable integration was investigated using the panel unit root test proposed by Levin *et al.* (2002) and Im *et al.* (2003). The Levin-Lin-Chu (LLC) test considers the following basic augmented Dickey-Fuller (ADF) specification, as follows:

$$\Delta y_{it} = \alpha y_{it-1} + \sum_{j=1}^{p_i} \beta_{ij} \Delta y_{it-j} + X_{it} \delta + \varepsilon_{it} \tag{5}$$

We assume a common $\rho - 1$, but allow the lag order for the difference term p_i to vary across the cross-section. The null hypothesis is there is a unit root, and the alternative is there is no unit root. Furthermore, Im *et al.* (2003) or Im-Pesaran-Shin (IPS) test allows for individual unit root processes and the ρ_i to vary across cross-sections. The null hypothesis is $\alpha_i = 0$ for all i , while the alternative hypothesis is $\alpha_i < 0$ for $i = 1, 2, \dots, N_1$ and $\alpha_i = 0$ for $i = N + 1, N + 2, \dots, N$. Rejecting the null hypothesis does not imply rejecting the unit root for all i .

After establishing the existence of a panel unit root, the second step was to test the panel integration using the Pedroni test to determine whether there is a long-run equilibrium relationship between the variables. Pedroni's cointegration test is appropriate because it allows us to test the cointegration of models involving more than one independent variable. The panel cointegration test allows for cross-sectional dependency with both different individual effects and deterministic trends and it can be written as:

$$\begin{aligned} \ln IE_{it} &= \alpha_{it} + \delta_i t + \beta_1 \ln Y_{it} + \beta_2 \ln Y_{it}^2 + \beta_3 \ln \text{CORR}_{it} + \beta_4 \ln \text{TOU}_{it} + \varepsilon_{it} \\ \varepsilon_{it} &= \rho_{it} \varepsilon_{it-1} + u_{it} \end{aligned} \tag{6}$$

The parameters α_{it} and δ_i allow for the possibility of country-specific effect and deterministic trend effect, respectively. ε_{it} represents the estimated residual deviations from the long-run relationship. There are two tests such as panel tests and group tests to test the null hypothesis of no cointegration. The panel tests are based on the within-dimension method and include four statistics of panel V-statistic, panel rho-statistic, panel PP-statistic and panel ADF-statistic. Second, the group tests are based on the between-dimension method and include three statistics, namely, group rho-statistic, group PP-statistic and group ADF-statistic. Then, the long-run cointegration vector was estimated using FMOLS (McCoskey and Kao, 1998). The advantage of the FMOLS is that it corrects for both endogeneity bias and serial correlation.

3.1 Data

Eq. (4) was estimated using panel data covering nine countries (Ukraine, Iceland, Slovenia, Czechia, Slovakia, Kazakhstan, Belarus, Finland and Norway) from 2001 to 2016. Income inequality (as measured by the Gini index), income (as measured by GDP per capita) and corruption (as measured by control of corruption) were collected from the World Development Indicators (WDI) provided by the World Bank, whereas tourism data (as measured by tourism revenue as a percentage of GDP) were collected from World Travel and Tourism Council. The Gini coefficient ranges from zero (perfect equality) to one (perfect inequality). More importantly, all variables were transformed to natural logarithms, from which the estimated coefficients could be interpreted as elasticities.

4. Results and discussion

We employed panel unit root tests to identify the order of integration of each variable. The results of the LLC and IPS panel unit root tests for each variable are shown in Table 1. Each test is run for the level and the first difference of variables. From Table 1, all variables were nonstationary at levels. After taking the first difference, the results confirmed the stationarity of all variables, concluding that all of the variables employed in this study are integrated at order one or $I(1)$.

Once the integrating order of the variables was confirmed, the existence of a long-run dynamic relationship between variables was tested using Pedroni (1999), and the panel cointegration test statistics are reported in Table 2. The five statistics significantly reject the

| | Level | | | | First difference | | | | |
|-----------------------|-------|-------|-------|-------|------------------|---------|----------|----------|-----|
| | LLC | | IPS | | LLC | | IPS | | |
| | C | C&T | C | C&T | C | C&T | C | C&T | C&T |
| lnIE | -1.57 | -3.16 | -1.38 | -3.08 | -4.59*** | -4.45** | -5.99*** | -5.22*** | |
| lnY (Y ²) | -2.16 | -0.83 | -2.10 | -0.65 | -2.92* | -3.90** | -2.95* | -5.33** | |
| lnCORR | -0.97 | -1.67 | -0.93 | -1.68 | -4.45*** | -4.47** | -4.47*** | -4.75*** | |
| lnTOU | -1.23 | -1.74 | -1.23 | -1.53 | -4.11*** | -4.64** | -4.12*** | -4.28** | |

Note(s): *, ** and *** denote significant at 10, 5 and 1% levels, respectively. C stands for constant without trend and C&T represents constant with trend. The full results are available upon request. Lag length selection is based on Schwarz information criterion (SIC)

Table 1.
Panel unit roots

null hypothesis of no cointegration, except for the panel and group rho-statistics. This shows the existence of a cointegration relationship between income inequality and the variables (income, income squared, corruption and tourism). Thus, the Pedroni cointegration technique confirms the existence of a long-run relationship between the variables, and the direction of causality can be investigated.

In the third step, we investigated the impact of income, corruption and tourism on income inequality. The FMOLS results are reported in Table 3. The findings indicated that income and income square have a positive and negative impact on income disparity, respectively. The results confirm the existence of an inverted U-shaped relationship between income and income inequality, hence supporting the presence of the Kuznets hypothesis for countries with the most equal income distribution due to demographic shifts. For example, Ukraine, Iceland, Slovenia and Slovakia have a higher proportion of working-age people aged between 15 and 64 and lower unemployment rates (Le et al., 2020; Canh et al., 2020; Ghosh and Mitra, 2021; Huynh, 2022; Ali et al., 2022). Working-age population groups are important because they increase the country’s labor share and productivity, thereby resulting in less inequality. Moreover, given our sample, the negative sign of income squared showed that income inequality is lower in countries with more economic development.

The effect of corruption on income inequality is positive and statistically significant for these nine countries. As a result, an increase in corruption would expand income inequality. As corruption magnifies, high-income groups will have more opportunities and resources than low- and middle-income groups (Keneck-Massil et al., 2021; Khan, 2021; Jonathan Gimba et al., 2021;

Table 2.
Pedroni residual
cointegration test

| Test statistics | Constant + trend |
|---------------------|------------------|
| Panel V-statistic | 0.1523** |
| Panel rho-statistic | 1.6485 |
| Panel PP-statistic | -6.1406*** |
| Panel ADF-statistic | -3.8905*** |
| Group PP-statistic | -13.5015*** |
| Group ADF-statistic | -5.3004*** |
| Group rho-statistic | 3.344 |

Note(s): *, ** and *** denote significant at 10, 5 and 1% levels, respectively

Table 3.
Panel FMOLS

| Country | lnY | lnY ² | lnCORR | lnTOU |
|-------------------|--------------------|----------------------|--------------------|----------------------|
| Group | 4.3202* [1.9835] | -1.4349*** [3.0135] | 0.4426** [2.1023] | -0.2009*** [-4.1058] |
| <i>Individual</i> | | | | |
| Ukraine | 1.0246*** [2.5661] | -0.0731** [-2.1438] | 0.7970* [1.9842] | -0.0354*** [-2.1627] |
| Iceland | 0.3664*** [3.8955] | -0.7178** [-2.2174] | 0.1233*** [2.7020] | -0.2230*** [-3.5875] |
| Slovenia | 5.3819*** [14.504] | -0.4477*** [-6.2866] | 1.1584*** [4.5303] | -0.0284* [-1.8633] |
| Czechia | 1.2706*** [3.9294] | -0.2020*** [-2.5216] | 0.1297* [2.0401] | -0.0090** [-2.1479] |
| Slovakia | 2.0746*** [4.2383] | -0.4425*** [-3.1964] | 0.6507** [2.2161] | -0.1107** [-2.1686] |
| Kazakhstan | 2.4588*** [4.3171] | -0.4974*** [-2.9533] | 0.0674** [2.1053] | -0.0797** [-2.7174] |
| Belarus | 0.1927** [2.2639] | -0.1174*** [-2.5794] | 0.4882** [2.1455] | -0.0321* [-2.0513] |
| Finland | 0.1280*** [2.5225] | -0.0051* [-1.8238] | 0.0751*** [3.6933] | -0.0551* [-1.7965] |
| Norway | 3.6047** [2.2026] | -0.8085** [2.1952] | 0.2514** [2.2979] | -0.3878* [-1.9808] |

Note(s):*,** and*** denote significant at 10, 5 and 1% levels, respectively
Figures in brackets stand for t-statistics

Khan *et al.*, 2022). Thereby, the gap between the high-income and the low-income groups will widen, and income inequality will increase. Second, corruption contributes to inequality by diverting government spending away from programs benefiting poor people (education and health), which will predominantly hurt people in lower-income groups. Others suggest that the burden of corruption is typically disproportionately borne by low- and middle-income individuals because they pay a higher proportion of their income as a bribe.

Moving to the findings of the study’s focal variable, tourism is a negative and statistically significant indicator in all these nine countries. This indicates that tourism boosts the country’s economic growth while simultaneously decreasing income inequality. The rationale of this argument is that tourist inflows stimulate economic activity by generating revenue and that higher economic growth improves income distribution (Fang *et al.*, 2021; Ghosh and Mitra, 2021; Odhiambo, 2022; Sudsawasd *et al.*, 2022). For instance, tourism revenue generated by local governments can be used to invest in industries such as accommodation, food and beverage, telecommunications and recreation, benefiting small and medium enterprises (SMEs), resulting in a higher benefit to lower-income individuals and a reduction in existing income inequalities (Kahveci, 2022). Furthermore, the United Nations Commission on Sustainable Development urged governments to maximize tourism’s potential for poverty eradication by putting poor people and poverty at the center of the idea. In this context, pro-tourism is an approach that guarantees the poor’s benefits from tourist inflows by unlocking opportunities for them in the tourism sector. Thus, tourism can be used as an instrument to reduce poverty and narrow the income gap. In that way, three core activities are needed to narrow the rich-poor gap: expanding business and employment opportunities in the tourism industry for low-income individuals to increase access to economic benefits; promoting the poor’s participation in tourism planning and decision-making process; and encouraging partnership between the private and public sectors in introducing new tourism products. This implies that expanding the tourism sector will improve the welfare of the low- and middle-income earners and reduce the inequality in those countries.

For robustness purposes, the results obtained from the FMOLS estimator were tested using an alternative single equation estimator, namely the dynamic ordinary least squares (DOLS) methodology. The advantage of this approach is that it takes into account the presence of a mixed order of integration of the individual variables in the cointegrated framework. This estimator addresses two important limitations: possible endogeneity problem and small sample bias (Begum *et al.*, 2015). Besides that, the cointegrating vectors obtained using the DOLS estimator are asymptotically efficient. Table 4 depicts the DOLS estimator findings, whose results are consistent with the FMOLS results when looking at the sign and significance of the

| Country | lnY | lnY ² | lnCORR | lnTOU |
|-------------------|--------------------|----------------------|--------------------|----------------------|
| Group | 1.8522*** [4.3297] | -9.7080*** [-4.9756] | 0.3422*** [5.0932] | -0.2118*** [-4.7252] |
| <i>Individual</i> | | | | |
| Ukraine | 0.2199*** [6.4572] | -0.2919* [-2.0399] | 1.1008* [3.050] | -0.0394* [-1.8664] |
| Iceland | 0.9430** [2.3716] | -1.4921* [-2.1277] | 0.1672*** [2.4316] | -0.2060*** [-3.5145] |
| Slovenia | 1.0351*** [5.8477] | -4.6922*** [-8.1033] | 2.2014*** [3.8205] | -1.6826* [-1.8422] |
| Czechia | 0.1245*** [7.9575] | -0.2082* [-1.9507] | 0.1939** [2.1133] | -0.1505** [-1.8485] |
| Slovakia | 0.1436*** [3.6258] | -1.5423* [-1.6923] | 0.1133** [2.2596] | -0.2388*** [-2.5962] |
| Kazakhstan | 0.9281* [1.9281] | -1.5324*** [-2.4719] | 0.2286** [2.1687] | -0.3515* [-2.1783] |
| Belarus | 0.1662*** [7.5050] | -1.1122* [-1.8221] | 0.0645* [1.9923] | -0.1742*** [-2.7633] |
| Finland | 0.1349*** [4.2221] | -1.0724 [-1.5928] | 0.1260*** [8.1261] | -0.0288** [-2.3409] |
| Norway | 0.5549** [2.4709] | -1.4295* [-1.9841] | 0.4629** [2.3292] | -0.4240*** [-3.4698] |

Note(s): *** and** denote significant at 10, 5 and 1% critical values, respectively
Figures in brackets stand for *t*-statistics

Table 4.
Panel DOLS

coefficients presented in [Table 3](#). The negative and statistically significant coefficient of tourism indicates that income inequality decreases with a rise in tourism growth. Following the results of the FMOLS and DOLS estimations, we can conclude that the growth of tourism will result in more equitable income distribution. Therefore, a further expansion of the tourism sector is likely to play a significant role in reducing income inequalities in those economies.

5. Conclusion

The tourism industry is expanding globally to increase employment, income, tax revenue and foreign exchange reserves. Given the significance of tourism, it becomes an essential industry that influences the growth of the country's economy. Aside from this advantage, there is a growing concern that the tourism industry will have a substantial impact on global economic inequality. Therefore, this study aims to examine the impact of tourism on income inequality in the world's most equal income distribution countries from 2001 to 2016. The panel unit root tests, panel cointegration tests and FMOLS estimator were used to estimate the results. Our empirical findings support the existence of a long-run equilibrium relationship between the variables in these nine countries. Furthermore, this study uncovers evidence supporting the Kuznets hypothesis for the world's top income equality countries. More specifically, tourism is negatively related to income inequality, implying that income distribution becomes more equitable in these nine countries as tourism rises. Hence, our result confirms the likelihood that tourism will remain a development strategy in the foreseeable future as it holds the potential to be a tool for reducing income disparity.

Our findings suggest that policymakers should prioritize investments in the tourism sector to narrow income disparity. To attain this goal, these countries must establish tourism-related businesses such as food and lodging services, travel agencies and transportation, retail and souvenir industries. This has the potential of creating jobs in local communities and attracting a significant number of tourists, which will eventually increase income and reduce inequality. Moreover, governments are encouraged to implement effective tourism policies that strengthen the integration of the tourism industry with other sectors including education, training and the environment. As a result, it fosters fruitful collaboration and contributes to the sector's overall performance.

Despite the aforementioned findings, this study is without any limitations. One of the study's shortcomings is that it focuses on the impact of tourism on income inequality on a general basis. Tourism is a broad sector with various types such as national tourism, international tourism, outbound tourism, business tourism and rural tourism, and the impact of certain tourism types on income inequality is not completely investigated. Originally, this study aims to incorporate the various types of tourism industries, but the available data did not allow for this type of analysis. Given the above, we suggest that further studies be conducted by focusing on the impact of a specific tourism sector on income inequality.

Note

1. There are limited past studies dealing with European countries with regard to entrepreneurship-tourism nexus such as [Lordkipanidze et al. \(2005\)](#), [Matlay and Westhead \(2007\)](#) and [Solvoll et al. \(2015\)](#).

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Corresponding author

Yogeeswari Subramaniam can be contacted at: yogeeswari.s@utm.my

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