

# **The Impact of Geopolitical Risks on Tourism Supply in Developing Economies: The Moderating Role of Social Globalization**

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## **Abstract**

Capital investment is vital for sustainable tourism growth, particularly in times of geopolitical turmoil. This study examines how tourism investment was influenced by geopolitical risks considering social globalization as a moderating factor. Data were collected from 18 developing economies between 1995 and 2018. The results from the fixed-effects and the Least-Squares-Dummy-Variable-Corrected methods show that the geopolitical risks negatively affect capital investment in tourism, with social globalization playing a moderating role in alleviating the adverse effect. The results were robust to different measures and analyses. The study advances our understanding of sustainable tourism growth amid geopolitical turmoil. Policymakers, especially those from developing economies, are suggested to be vigilant about the media atmosphere of geopolitics and enhancing social globalization as a countermeasure against politically turbulent times. The study also provides implications for alleviating the impact of the global pandemic on tourism investment.

**Keywords:** Tourism investment, Tourism development, Geopolitical risks, Social globalization, Panel data estimation

**JEL Codes:** Z32; O16; C33

## **Introduction**

It is well recognized that the tourism industry is susceptible to geopolitical turmoil, natural disasters, and health crises such as the current COVID-19 pandemic (Dahles and Susilowati, 2015; Seabra et al., 2020). Most of the previous studies have focused on the impact of geopolitical risks on the demand side of tourism, such as tourist arrivals (Balli et al. 2019; Demir et al., 2019; Tiwari et al., 2019), tourism receipts (Alola et al., 2019), and inbound tourism as measured by visits or revenues generated from the tourism sector (Saha et al., 2017). However, investment in the supply side that sustains tourism growth has received little research attention, despite the investment-side perspective having been investigated in the literature on macro-economic phenomena (Apergis et al., 2018; Bilgin et al., 2020; Bloom et al., 2007; Collier and Hoeffler, 2004; Enders and Sandler, 2006). Given the importance and uniqueness of the tourism investment patterns amid geopolitical turmoil for sustainable tourism growth, the impact of geopolitical risks on tourism investment requires prompt research attention.

Geopolitical risk refers to the risk that is associated with conflicts between states competing for territory. Geopolitical risk captures both the risk of a potential conflict and risks associated with the escalation of a conflict (Caldara and Iacoviello, 2019). Geopolitical risks are a key factor to be considered in the capital investment decision process. Therefore, this study examines the effects of geopolitical risks on capital investments in the supply side of tourism, considering the role of social globalization, which may alleviate the negative impact of the geopolitical risks on tourism investment. Our central hypothesis is that a surge in the geopolitical risks level causes a decrease in tourism investment as capital is mainly profit-driven and susceptible to geopolitical risks. Utilizing panel data from 1995 to 2018 from 18 developing countries, we observe that the geopolitical risks decrease travel and

tourism investment. We also use the geopolitical risk (GPR) index constructed by searching newspapers with a string of relevant keywords based on an algorithm to provide a more comprehensive picture of geopolitics' role in tourism. The GPR index is comparable across the countries, thus an ideal measure for analyzing its impact on travel and tourism investments across countries. The results were robust by various sensitivity checks. Additionally, in the quantitative literature, social globalization, defined as the interchange of views, ideas, and social values between nations (Dwyer 2015), is neglected as it is hard to measure. In this paper, we particularly investigate the moderating role of social globalization via employing the special indices of social globalization collected from three different dimensions.

Our study makes three significant contributions to the tourism literature. First, to the best of our knowledge, the mainstream tourism studies center on the demand side. This paper is the first research analyzing the effects of geopolitical risks, particularly on the tourism market's supply side, denoted by travel and tourism investment. Second, this study is the first attempt to investigate the moderating role of social globalization in the relationship between geopolitical risks and tourism investment. The proxies of social globalization distinguish between *de facto* (outcome-oriented) and *de jure* (policy-related) indicators and are decomposed into interpersonal, informational, and cultural globalization to gain in-depth and specific insights. Third, unlike most previous studies that use firm-level or micro-level data (see, e.g., Akron et al., 2020) to analyze firm-specific investment decisions, we use the country-level data rather than the firm-level data, which provides a macro-view of capital investment in the tourism industry.

## **Literature Review and Hypothesis Development**

### ***Risks and Tourism***

Several studies have examined travelers' perceptions of risks and the corresponding effect on their travel behaviors and destination choices. For example, Roehl and Fesenmaier (1992) categorize their survey respondents according to their preferences for perceived travel risks and then study how the heterogeneity in risk preference affects their travel behaviors. Sönmez and Graefe (1998) find that perceived risks and safety are strong predictors for avoiding dangerous regions rather than planning to visit them. Reisinger and Mavondo (2005) investigate the effect of cultural and psychographic factors on perceptions of travel risk on intentions to travel internationally. Sharifpour et al. (2014) particularly investigate the effects of prior tourist knowledge on their perceived risks. Similarly, Park and Tussyadiah (2017) examine perceived risk in mobile travel booking with a smartphone. Karl (2018) pays attention to tourists' self-assessments of risk and uncertainty in travel decision-making. As Williams and Balaz (2015) point out, this line of research focuses on understanding the multiple dimensions of perceived risks and factors contributing to perceived risks.

Several other studies have looked into objective macro-risks instead of perceived risks. For instance, Smeral (2010) analyzes the macroeconomic effects of the global recession and its impact on inbound tourism. Lee and Chen (2021) investigate the impacts of country risks-including political, financial, and economic on tourism development. In this study, we focus on capital investment decisions in tourism, which is neglected in the literature. We extend the spectrum of objective macro-risks from within-country macro-risks (Lee and Chen, 2021) to between-country macro-risks. Moreover, we aim to explore the potential moderating role of social globalization on the relationship between geopolitical risks and tourism investment. We not only consider the investor as an economic agent, but also as a social agent in the world.

## ***Geopolitical Risks***

Researchers have shown continuous interest in studying the effects of geopolitical risks since the 9-11 attacks, which influenced the global economy and many industries, particularly the tourism industry, in the world. Most of the studies investigate geopolitics' effect on territorial disputes, diplomatic tensions, and terrorism on a wide range of economic issues (Enders and Sandler, 2006; Gupta et al., 2004; Saha and Yap, 2014; Tavares, 2004). Overall, terrorism decreases capital inflows (Collier and Hoeffler, 2004; Enders and Sandler, 2006), slows down economic growth, and thus causes spill-over costs among trading partners (Murdoch and Sandler, 2002; 2004), and affects the stock returns and the price volatility of stock markets at the national and global levels (Abadie and Gardeazabal, 2003; Chen and Siems, 2004; Drakos, 2004). Moreover, economic and political uncertainty adversely affects private investments (Bloom et al., 2007; Dixit et al., 1994).

The earlier studies seem to interpret and measure geopolitical risks in a somewhat arbitrary way. Each of them arbitrarily captures a narrow subset of geopolitics risks while there is a full spectrum (Demiralay and Kilincarslan, 2019). There has been no consensus on how to measure geopolitical risks until Caldara and Iacoviello (2019). They employ a text-search algorithm to count the number of occurrences of a word string consisting of "war," "terrorism," "military," "geopolitics," and such in articles published in leading national and international newspapers to construct an index of GPR. The index is allowed to change with the updates of newspapers and choices of "keywords," but the underlying logic stays intact as long as the algorithm is the same. This method provides flexibility, stability, and a fairly comprehensive picture. It has been spread quickly and adopted by researchers to cover a broader spectrum of geopolitics (Balli et al., 2019; Bilgin et al., 2020; Demiralay and Kilincarslan, 2019; Tiwari et al. 2019).

## *The Impact of Geopolitical Risks on the Tourism Industry*

Compared with other industries, the international tourism industry is one of the first falling dominoes activated by the push from certain geopolitical risks. Drakos (2004) reports that terrorism significantly affects specific industries, such as airlines and tourism. In the tourism literature, most of the studies focus on the adverse effects of geopolitical risks on inbound tourism, such as the visits to or revenues from the tourism sector (Demir et al., 2019), the number of tourist arrivals (Tiwari et al., 2019) and the tourism receipts (Alola et al., 2019). Demiralay and Kilincarslan (2019) observe the negative impact of geopolitical risks on travel and leisure indices' stock returns in the three regions of Asia-Pacific, Europe, and North America. Balli et al. (2019) show that the impact of geopolitical risk on international tourism demand is negligible in countries that are popular tourist destinations. In short, tourism supply (capital investment in travel and tourism) is, to some extent, neglected in the tourism literature, apart from Akron et al. (2020) who suggest the negative impact of economic policy uncertainty (EPU) on corporate investment in hospitality and tourism industries in only the single developed economy of the United States. Similarly, many other prior studies in tourism also choose a particular country (Alola et al., 2019; Tiwari et al., 2019) or a limited number of regions (Demiralay and Kilincarslan, 2019) when discussing the effect of geopolitical risks, apart from Demir et al. (2019) who conducted a cross-country study and report the adverse effect of geopolitical risks on inbound tourism.

More recently, there is an increasing trend in the literature that highlights the role of economic policy uncertainty (EPU) in tourism and the role of geopolitical risks. The majority of these studies (Akron et al., 2020; Demir et al., 2020; Demiralay and Kilincarslan, 2019; Tiwari et al., 2019) employ the EPU index based on a text-search algorithm over the leading newspapers with a different string of chosen words consisting of "uncertain" or "uncertainty" and "economy" or "economical," which draws a distinctive line between the EPU index and

GPR index concerning the implied information they capture from newspapers. The EPU index concentrates on the economic news, while the GPR index emphasizes geopolitical news. Furthermore, the EPU index indicates a much milder atmosphere and tone than the GPR index. According to Tiwari et al. (2019), GPR's influence is stronger than that of EPU and, additionally, the GPR has long-run implications. In contrast, the EPU holds short-run consequences on inbound tourism.

As discussed earlier, most studies emphasize the effect of geopolitical risks on tourism demand (Alola et al., 2019; Balli et al., 2019; Demir et al., 2019; Drakos, 2004; Song et al., 2012; Tiwari et al., 2019), neglecting supply. Studies have indicated a decrease in capital investment in general when geopolitical risks exist (Araña and León 2008; Saha and Yap, 2014; Thompson 2011). It is no surprise that capital is "footloose" and switches between territories searching for the most favorable regulatory regimes where the profits and interests can be realized with the fewest risks. From an economic view, we argue the tourism industry is more vulnerable to geopolitical risks than many other industries as the effect of geopolitical risk is almost immediate and direct in the tourism industry with the cancellation of trips and suspension of flights, instantly leading to excessive supply in tourism. Therefore, the capital would respond by closing up shops and facilities in the local tourism industry. That is, tourism supply (capital investment) decreases with geopolitical risks. Thus,

**H1:** *The tourism supply (capital investment) is negatively related to geopolitical risks in general.*

### ***The Moderating Role of Social Globalization***

The tourism literature mainly interprets "globalization" as "rising income," followed by "rising consumption" in international tourism (Crouch, 1994; Dwyer 2015), which then attracts investment in local tourism supply (Cortez-Jimenez and Pulinac, 2010). However,

over-reliance on international tourism makes tourism industries in developing countries highly vulnerable to global geopolitical risks. This economic globalization since the 1990s has been materialized through a central channel of multinational enterprises (MNEs), which are the key drivers of international capital investment, assumingly incentivized by profits (Dwyer, 2015). Profit-driven economic globalization has led to a series of consequences, such as increasing income inequalities and decreasing overall welfare domestically (Antràs et al., 2017). These economic globalization concerns trigger anti-globalization activities worldwide, such as the Trump Administration's trade protectionism policies.

Despite the anti-globalization trend, exchanging ideas, views, and values is inevitable in the modern era. Social globalization meets the needs of citizens for communications that strengthen the ties between societies, while economic globalization builds upon the economic needs of MNEs. Subsequently, MNEs may suspend certain international cooperation when the environment is unfavorable. However, it is unlikely to block cross-border information flow and social exchange. Compared with economic globalization, social globalization does not receive sufficient attention from scholars. In this study, we focus on the moderating role of social globalization to narrow the research gap. Generally, people have the desire to share joys and sorrows. We argue that, in general, social globalization helps shorten psychological distance and increase mutual understandings between peoples around the world. During troubled times, social globalization may reinforce people's connections in different countries and create a sense of global solidarity. These aspects of social globalization can affect the effects of geopolitical risks (amount of risk investors are willing to take) on tourism investments. Therefore, we propose the following hypothesis:

**H2:** *Social globalization significantly alleviates the adverse impact of geopolitical risk on capital investment in travel and tourism.*

We decompose social globalization into three components: interpersonal globalization, informational globalization, and cultural globalization.

First, unlike profit-driven MNEs, it is more likely for individuals to hold out rather than withdraw a helping hand to an acquaintance in trouble (Greitemeyer et al., 2003; Sacco et al., 1985). We argue that interpersonal globalization narrows the social distances between peoples from various nations. Though they may come from different backgrounds, acquaintances with social proximity tend to show more empathy and sympathy to each other during difficult times than distant strangers. We then propose the following hypothesis:

**H2a:** *Interpersonal globalization significantly alleviates the adverse impact of geopolitical risk on capital investment in travel and tourism.*

Second, informational globalization indicates that people worldwide are likely to share more information and gain easier access to public information, which reduces information asymmetry between people. People with more accurate and in-time information are more likely to assess information objectively without exaggeration (Miranda and Saunders; 2003; Yang and Maxwell, 2011). This evidence implies that information globalization may help alleviate more-than-necessary fears and concerns in difficult times. We, therefore, propose the following hypothesis:

**H2b:** *Informational globalization significantly alleviates the adverse impact of geopolitical risk on travel and tourism capital investment.*

Finally, cultural globalization implies that peoples from various nations share social norms and cultural values, leading to in-depth understandings and profound awareness between people with different backgrounds (Leung et al., 2005; Rockstuhl et al., 2011). Cultural globalization tends to encourage mutual respect between people (Smith et al., 2013), thus helping reduce institutional bias and improve the understanding between groups and

nations regardless of ethnicity or religion, which is expected to reduce the negative impact of geopolitical risks on tourism. We then propose the following hypothesis:

**H2c:** *Cultural globalization significantly alleviates the adverse impact of geopolitical risk on capital investment in travel and tourism.*

## **Data and Method**

### ***Data***

The primary variable of interest is the GPR index, which is calculated for 18 developing economies, namely, Argentina, Brazil, PR China, Colombia, India, Indonesia, Israel, Malaysia, Mexico, Philippines, Russian Federation, Saudi Arabia, South Africa, South Korea, Thailand, Turkey, Ukraine, and Venezuela. We use the dataset, collected by Caldara and Iacoviello (2019). The GPR index focuses on the number of articles related to geopolitical acts, tensions, and threats relative to the number of all articles in 11 leading global newspapers. The index's average is defined as 100 over 2000-2009 (see for more detail at <https://www.matteoiacoviello.com/gpr.htm>). Therefore, for example, the value of 120 in 2018 in the Russian Federation means that the country has a 20% higher GPR in 2018 than in 2000-2009. Note that we use both the current and lagged coefficients of the GPR index in the logarithmic form. The lagged indicator implies that the GPR's impact on Capital Investment in Travel and Tourism (CITT) and Capital Investment in Travel and Tourism per capita (CITTPC) may be delayed since the decision on travel and tourism investments can be shaped in the long run.

We analyze two tourism supply measures: a) the level of *CITT*, and b) the per capita *CITT*; i.e., the total amount of investment is divided into the country's population. These measures include new capital investment spending by all industries (domestic and foreign direct investments) directly involved in travel and tourism. The measures show investment

spending by other industries on specific tourism assets such as new visitor accommodation and passenger transport equipment, restaurants, and leisure facilities.

We define this measure as the *CITTPC*. Both measures are defined by the real United States Dollar (USD) prices in the logarithmic form, and the related data are obtained from World Travel and Tourism Council (WTTC) (2021). The empirical analyses cover the period from 1995 to 2018, and the beginning year is due to the availability of data from CITT.

To investigate the effect of social globalization (Hypothesis 2), we use the *overall index of social globalization* as well as its sub-indices, i.e., *de facto (outcome-oriented)* and *de jure (policy-related) social globalization*. De facto variables capture the facts directly related to social globalization in a country. In contrast, de jure variables indicate the potential of infrastructure development and the country's institutional environment. To be specific, these two indices also have six sub-indices, which are tagged as follows: i) *interpersonal globalization (de facto)* based on international students, international tourism, international voice traffic, migration, and transfers; ii) *interpersonal globalization (de jure)* based on the freedom to visit, international airports, and telephone subscriptions; iii) *informational globalization (de facto)* based on high-tech exports, international patents, and used internet bandwidth; iv) *informational globalization (de jure)* based on internet access, press freedom, and television access; v) *cultural globalization (de facto)* based on IKEA stores, international trademarks, McDonald's restaurant, trade in cultural goods, and trade in personal services; vi) *cultural globalization (de jure)* based on civil liberties, gender parity, and human capital. The related data are downloaded from the ETH Zurich's website ([kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-globalization-index.html](http://kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-globalization-index.html)) (Gygli et al., 2019).

We also use various types of control variables in the empirical analysis. We control the income effect (measured by per capita gross domestic product (GDP) and the price effect

(measured by lending interest rates). These are the main control variables in the empirical analysis. We also use several indicators that could affect the capital investments in travel and tourism, which show the structure of the economy and macroeconomic stances, such as domestic credit provided by the financial sector, urban population, total population, and trade openness. We obtain these data from the dataset of the World Bank (2021). Following Dogru et al. (2017), the log of tourist arrivals and log of tourism receipts (measures of tourism demand) are also included as additional controls. As the results do not vary, they are not reported to save space.

We also control the market regulations by using two indicators: economic freedom (index from 0 to 10) and business regulations (index from 0 to 10). A higher level of these indices means lower market regulation. The related data are obtained from Gwartney et al. (2019). Furthermore, we control economic globalization indicators, such as globalization of financial flows (the index of financial globalization) and globalization of trade (the index of trade globalization). Both indices are defined from 0 to 100, and the related data are obtained from Gygli et al. (2019).

Table 1 provides brief descriptive statistics of the dataset and defines variables in detail and their sources (the dependent and the explanatory variables are stationary).

[Table 1 around here]

In Table 2, we provide a correlation matrix for leading indicators in the dataset.

[Table 2 around here]

As shown in Table 2, the correlation between *CITT* and *CITTPC* is positive, as expected. There is a negative correlation between capital investments in travel and tourism (*CITT* and *CITTPC*) and GPR index. Investments are positively associated with the per capita GDP, and negatively correlated with the lending interest rates. Overall, the correlations are in

line with theoretical expectations. However, the GPR index is positively correlated with per capita GDP, and negatively correlated with interest rates. Per capita GDP is negatively correlated with lending interest rates, as expected.

### ***Model and Estimation Procedures***

Following the central hypothesis, we can write down the empirical models as such:

$$\ln CITT_{i,t} = \alpha_0 + \alpha_1 \ln GPR_{i,t} + \alpha_2 X_{i,t} + \varepsilon_{1i,t} \quad (1)$$

$$\ln CITT_{i,t} = \beta_0 + \beta_1 \ln GPR_{i,t-1} + \beta_2 X_{i,t} + \varepsilon_{2i,t} \quad (2)$$

$$\ln CITT_{i,t} = \gamma_0 + \gamma_1 \ln CITT_{i,t-1} + \gamma_2 \ln GPR_{i,t} + \gamma_3 X_{i,t} + \varepsilon_{3i,t} \quad (3)$$

$$\ln CITT_{i,t} = \delta_0 + \delta_1 \ln CITT_{i,t-1} + \delta_2 \ln GPR_{i,t-1} + \delta_3 X_{i,t} + \varepsilon_{4i,t} \quad (4)$$

Eq. (1) to Eq. (4),  $i$  denotes countries, and  $t$  represents the years.  $\ln CITT_{i,t}$  represents two capital investment measures in travel and tourism ( $CITT$  and  $CITTPC$ ) in the logarithm form.  $\ln CITT_{i,t-1}$  is the lagged dependent variable to model persistence in the investments meaning that measuring investments can take more than one year.  $\ln GPR_{i,t}$  is the index of GPR in the logarithm form. We also use  $\ln GPR_{i,t-1}$ , which is the lagged index of GPR in the logarithm form. In doing so, we aim to control the delaying impact of GPR on investments; that is, investment decisions can previously be implemented. Under this condition, GPR will affect  $CITT$  and  $CITTPC$  with a delay. Finally,  $X_{it}$  denotes the control variables, which are previously explained.

We estimate the models from Eq. (1) to (4) mainly via the fixed-effects (FE) estimations. Besides, we utilize the LSDVC estimator of Bruno (2005). The LSDVC estimator can solve potential problems due to endogeneity bias and reverse causality (Bilgin et al., 2020; Bruno, 2005; Demir et al., 2019). Here, "bias correction" is started by the Arellano–Bond method. Given that the dataset includes 18 countries ( $N$ ) and 23 years ( $T$ ), i.e.,

$N < T$ , dynamic panel data estimation procedures will provide inefficient findings because the number of cross-sections is less than 25 (Bruno, 2005). We treat the FE estimations' results to the benchmark results and run the LSDVC estimators in a robustness check.

Furthermore, to test hypotheses 2, 2a, 2b, and 2c, we formulate the following model:

$$\ln CITT_{i,t} = \gamma_0 + \gamma_1 \ln CITT_{i,t-1} + \gamma_2 \ln GPR_{i,t} + \gamma_3 \ln GPR_{i,t} \times SOGI_{i,t} + \gamma_4 SOGI_{i,t} + \gamma_5 X_{i,t} + \varepsilon_{3i,t} \quad (5)$$

where *SOGI* stands for the index of social globalization. We employ the interaction term of  $\ln GPR_{i,t} \times SOGI$  to capture the moderating effect of social globalization on the relationship between geopolitical risks and tourism supply (capital investment in travel and tourism). Specifically,  $\gamma_3$  tells how tourism supply changes with geopolitical risks due to social globalization. As mentioned above, we apply three proxies of social globalization to depict social globalization through different lenses: interpersonal globalization, information globalization, and cultural globalization.

## Empirical Results

### *Benchmark Regressions for CITT*

We report the results for *CITT* in Table 3. Columns 1 and 2 consider both the per capita income and the lending interest rates as the main control variables.

[Table 3 around here]

All the coefficients of GPR are significant and indicate that the index of the GPR negatively affects *CITT*. For example, column 1 illustrates the baseline model results (Model 1) and reports that a 1% rise in the GPR index yields a 0.21% reduction in *CITT* at the significant level of 1%. This suggests that tourism investment is sensitive to geopolitical risk fluctuations: the higher the geopolitical risks, the lower the capital investment in tourism,

consistent with our central hypothesis. The lagged GPR index results are also in line with the current index of the GPR, which show the negative impact on *CITT*, but with a smaller magnitude of coefficients in general. In other words, the negative impact lasts and extends into the future, consistent with Tiwari et al. (2019), which find long-run implications of GPR.

As long as per income surges, investments in tourism rise as expected in terms of control variables. Moreover, lending interest rates are negatively associated with the *CITT* since a lower interest rate makes capital cheaper. These results for the control variables are also in line with previous studies, such as Demir et al. (2019).

### ***Benchmark Regressions for CITTPC***

We provide the findings for *CITTPC* in Table 4. Similar to Table 3, Columns 1 and 2 consider both the per capita GDP and lending interest rates as the main controls.

[Table 4 around here]

All results demonstrate that the index of the GPR is negatively associated with the *CITTPC*. The lagged GPR index findings provide similar results concerning the negative impact of  $\ln\text{GPR}_{t-1}$  on the *CITTPC*, again consistent with Tiwari et al. (2019). Overall, the adverse effects of both the lagged and current GPR on capital investments in travel and tourism are robust by different models. There is strong supportive evidence for our central hypothesis 1.

### ***The Role of Social Globalization***

We further examine the moderating effect of social globalization on the relationship between geopolitical risks and tourism investment. Table 5 presents the detailed sensitivity analysis for the FE estimations.

[Table 5 around here]

Following previous studies (e.g., Gozgor, 2018; Potrafke, 2015), we include the overall social globalization indices as well as its sub-indices: so-called the *de jure* (policy-related indicators) and the *de facto* (outcome-oriented indicators) measures of social globalization. Furthermore, we add three sub-indices of these measures: i) interpersonal globalization, ii) informational globalization, and iii) cultural globalization. Overall, we include 18 different social globalization measures, defined by Gygli et al. (2019).

As shown in Table 5, the impact of the current coefficient and lagged coefficient of the GPR index on the capital investments in travel and tourism (measured by both *CITT* and *CITTPC*) is negative, regardless of which type of social globalization indicators we include in the model. Moreover, all coefficients of the GPR indicators are statistically significant. In short, our baseline finding is robust by including 18 indicators of social globalization.

We run the benchmark model by including an interaction term between GPR and social globalization and provide the findings in Table 6. From Column 1 to Column 6, we run the same model (Model 5) but with different social globalization indicators.

[Table 6 around here]

In Table 6, the unique effect of GPR on tourism investment is represented by everything that is multiplied by GPR in the model. For example, considering the first model (Table 6, Column 1), the total effect of the GPR associated with a certain level of KOFSGI is represented as  $(-0.784+0.009*KOFSGI)$ . To be more specific, the results indicate that for each one-unit rise in GPR, the adverse impact of GPR on tourism investment (i.e., -0.784) is reduced by the effect of social globalization (i.e.,  $0.009*KOFSGI$ ), suggesting that the unique effect of GPR on tourism investment varies with different levels of social globalization. Given KOFSGI has a min value of 20.80, an average value of 59.36 and a max value of 86.57 (see Table 1), if GPR rises by 1 unit, the tourism investment therefore

decreases by 60% at most (i.e.  $-0.784 + 0.009 \times 20.80 = -.60$ ) and by 0.5% at least (i.e.  $-0.784 + 0.009 \times 86.57 = -.005$ ), and averagely drops by 25% (i.e.  $-0.784 + 0.009 \times 59.36 = -.25$ ).

According to the results, the level of social globalization does neutralize the adverse impact of GPR on tourism investment and, the greater the degree of social globalization, the more adverse the effect it would offset. This supports our main hypothesis, i.e., though investors tend to reduce capital investment in tourism when there are geopolitical risks, social globalization ameliorates this tendency. The utility of investors, as human beings, consists of money profits as well as altruistic empathy. Furthermore, all the interaction term coefficients are significantly positive in Table 6, indicating that this conclusion is empirically and consistently supported for social globalization, regardless of how they are measured.

Additionally, the interaction term of informational globalization with GPR (Table 6, Column 5) has a coefficient of 1.1%, larger than the interaction term of interpersonal globalization with GPR (0.7%) and cultural globalization (0.7%). This suggests that in-time, accurate and easy-to-access information (informational globalization) plays an essential role in soothing the adverse impact of geopolitical risks, in comparison to close acquaintances (interpersonal globalization) and mutual respect and understanding (cultural globalization). Overall, the findings support hypotheses 2a, 2b, and 2c.

Interestingly, the results also show that social globalization negatively affects tourism investment and the effect of GPR reduces the adverse impact. For example, in Column 1 of Table 6, the results indicate that for each one-unit rise in KOFSGI, the adverse impact of KOFSGI on tourism investment improves with increasing GPR levels (i.e.,  $-0.043 + 0.009 \times \text{GPR}$ ). The GPR index's logarithm ranges from a minimum value of 3.576 to a maximum value of 5.565, with a mean value of 4.551 (see Table 1). Therefore, if KOFSGI increases by one unit, the tourism investment therefore decreases by 1.1% when GPR is the lowest (i.e.,  $-0.043 + 0.009 \times 3.576 = -.011$ ) and falls by 0.2% when GPR is at an average level

(i.e.,  $0.043 + 0.009 \times 4.551 = -0.002$ ), but **increases** by 0.71% when GPR is the highest (i.e.,  $0.043 + 0.009 \times 5.565 = .0071$ ). The break-even point is when the logarithm of the GPR index is 4.77. It could be that social globalization, to some extent, deters the desire to travel around. Thus the decreasing demand dampens the incentive to invest in tourism. For example, the convenience of visiting a museum or a natural spot via Cloud (information globalization), which claims to provide an immersive experience, could put people off taking a real journey.

Furthermore, infrastructure for social globalization is an attractive investment opportunity from the investors' perspective, but a promising rival for tourism investment. Geopolitical risks could affect the investment decisions between tourism and social infrastructure. Social infrastructure usually requires large long-term dedicated investment while tourism, in comparison, usually asks for short-term investment, which expects quick payback. Given hot money is always searching for investment opportunities, increasing geopolitical risks could divert investment from social infrastructure to tourism.

To further examine our results, we also run the benchmark regressions for *CITTPC* and provide the findings in Table 7. Table 7 reports similar findings to Table 6, which confirms that our findings are robust at both aggregate and personal levels.

[Table 7 around here]

### ***Robustness Checks***

#### *Results of LSDVC Estimations*

In Tables 8 and 9, we provide findings of the LSDVC estimator of Bruno (2005). We deliver results for *CITT* in Table 8 and the findings for *CITTPC* in Table 9.

[Table 8 around here]

According to the results from Tables 8 and 9, the required test results are observed to provide the LSDVC method's efficiency. Specifically, according to the findings of the Sargan statistic, the over-identifying restriction condition is satisfied. According to the results of the Arellano–Bond test, there is a significant first-order autocorrelation. Nevertheless, the validity of the second-order autocorrelation is rejected.

[Table 9 around here]

Similar to the FE estimations, we observe that the lagged dependent variable's estimated coefficient is positive and significant at the conventional statistical level. All LSDVC estimation results indicate that the GPR index negatively affects the capital investments in travel and tourism. Overall, we also observe that those baseline findings are robust by different estimation techniques.

#### *Additional Control Variables*

Following the previous studies (e.g., Bilgin et al., 2020), we include several other indicators to affect capital investment in general. We report the findings of FE estimations in Appendix I.

We include the domestic credit provided by the financial sector, the urban population, the total population, trade openness, financial globalization, and trade globalization. We also add market regulation indicators, such as the indices of economic freedom and business regulations.

According to the findings, the impact of geopolitical risks (measured by both the current coefficient and the GPR index's lagged coefficient) on capital investments in travel and tourism (measured by both *CITT* and *CITTPC*) remains negative. Therefore, our primary evidence is robust by adding various additional control variables.

#### *Sensitivity Analyses*

Following previous studies (e.g., Bilgin et al., 2020; Gozgor et al., 2019), we implement various sensitivity checks. We report the related findings in Appendix II.

First, we exclude the dependent variables' extreme values (*CITT* and *CITTPC*) and the primary variable of interest (GPR index). Following Gozgor et al. (2019), we define the extreme values as two standard deviations' distance from the average value. Second, we exclude some specific countries from the dataset since they may determine our main findings. Therefore, we exclude i) high-income countries, which are defined by the World Bank (i.e., Israel, Saudi Arabia, and South Korea), ii) Middle East countries (i.e., Israel and Saudi Arabia), iii) Latin American countries, iv) Eastern European countries (i.e., Russia, Turkey, and Ukraine), v) African countries (i.e., South Africa).

According to the findings, the impact of the current coefficient and lagged coefficient of the GPR index on the capital investments in travel and tourism (measured by both *CITT* and *CITTPC*) are found to be negative. Moreover, the coefficients of the GPR indices are statistically significant at the 1% level. Overall, the evidence is robust by excluding various countries from the dataset.

## **Conclusions and Discussion**

Capital investment is vital for sustainable tourism growth, particularly in times of crisis. Our work's main objective was to examine the effect of geopolitical risks on capital investment in tourism and how social globalization influences the impact. To the best of our knowledge, this is the first cross-country study in the literature to investigate the relationship between geopolitical risks and tourism supply (investment) in developing economies, where geopolitical risks are usually severer than developed countries. Specifically, we examine the impacts of geopolitical risks on capital investments in travel and tourism in 18 developing economies between 1995 and 2018. Based on a text-search algorithm (Caldara and Iacoviello,

2019), we develop a new index of geopolitical risks by searching for "keywords" through the leading newspapers. We find that geopolitical risks negatively affect tourism supply (capital investment in travel and tourism). The results were robust regardless of different capital investment measures in travel and tourism, and different econometric techniques were used by including various control variables and excluding outliers.

Furthermore, this is also the first study to test the moderating role of social globalization between geopolitical risks and tourism investment. We find that social globalization significantly alleviates the adverse impact of geopolitical risks on tourism investment, regardless of which indicator is adopted. Among all indicators, in-time, accurate, and easy-to-access information (informational globalization) plays an essential role in soothing the adverse impact of geopolitical risks, in comparison to close acquaintances (interpersonal globalization) and mutual respect and understanding (cultural globalization).

Overall, geopolitical risks are harmful to the travel and tourism sectors' investment, consistent with our central hypothesis. Therefore, the main policy implication of this paper is to advise policymakers to be vigilant about the media atmosphere of geopolitical risks, be fully aware of its adverse effect on tourism investment, and always have a plan B, such as providing incentives (e.g., subsidies or tax relief) for footloose capital investors to maintain the level of capital investments in travel and tourism. Second, as social globalization plays a moderating role and alleviates the negative effect of geopolitical risks on tourism supply, then policymakers in the tourism industry are advised to have a scheme in mind to promote social globalization, along with economic globalization, as a precautionary step against possible turbulent times, especially for those emerging countries that are more susceptible to geopolitical risks. Furthermore, economy-wise, informational globalization should have priority provided the resources are limited. Our findings are limited to 18 developing

economies, where the data for the index of the geopolitical risks are available. Future studies on this subject can focus on each developing economy by using time-series techniques.

The current COVID-19-related uncertainty can change the effects of geopolitical risks on tourism supply in several ways, which can be empirically tested in future studies. First, the pandemic has increased restrictions on people's movements and goods between countries, which affects the demand for tourism and, ultimately, the tourism supply. Second, the spread of COVID-19 is also related to geography. At this stage, small countries and islands have some advantages over the spread of COVID-19; however, these countries are more vulnerable to COVID-19-related uncertainty shocks. Therefore, the impact of COVID-19 on the tourism supply could be moderated by the country's size and geography. Third, for certain countries (e.g., Spain, Italy, Turkey), tourism is of strategic importance for the national economy. Governments may increase their role in the tourism sector. As such, COVID-19 can change the tourism sector's dynamics due to the government's role. Fourth, COVID-19 can accelerate humanitarian crises (e.g., food insecurity) due to the potential decline of foreign aid. Similarly, the long-standing military conflicts can be exacerbated due to COVID-19, which will harm the tourism sector's investments. As a result, there can be a double jeopardy effect on both geopolitical risks and global tourism investment due to some governments and companies' knee-jerk reactions to this global crisis without due consideration and coordination.

Disease risk and geopolitical risk, in terms of their effect on tourism investment, are similar. In the tourism sector, both can be interpreted as worries or concerns for safety, leading to social distance, which eventually affects tourism investment. In other words, both the risks of disease and geopolitics work with a similar underlying mechanism in the tourism sector. Thus, our study helps to reveal the mechanism that can improve our understanding of the COVID-19 effect in the tourism sector. Particularly, the role of social globalization

revealed in our study provides an important implication of social globalization's potential alleviation effect on the global pandemic's negative impact on tourism investment. Finally, it is important to note that the GPR index is biased towards the Western media as the news mainly comes from the major mainstream media. Given these media tend to focus on certain political issues in developing countries, we should always treat the GPR index with a certain degree of caution.

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**Table 1**  
**Descriptive Summary Statistics**

Variable	Definition	Data Source	Mean	Standard Deviation	Minimum	Maximum	Observations
Capital Investments in Travel and Tourism (Real USD Prices in Billion)	Logarithmic Form	WTTC (2021)	1.624	1.293	-1.368	5.101	432
Capital Investments in Travel and Tourism per Capita (Real USD Prices)	Logarithmic Form	WTTC (2021)	4.185	1.253	1.333	7.985	432
Geopolitical Risks Index	Logarithmic Form	Caldara and Iacoviello (2019)	4.551	0.257	3.576	5.565	432
Per Capita GDP (Real 2010 USD Prices)	Logarithmic Form	World Bank (2021)	8.808	0.869	6.514	10.45	428
Lending Interest Rate	Percentage	World Bank (2021)	0.172	0.165	0.033	1.227	399
Domestic Credit Provided by Financial Sector	Percentage of Gross Domestic Product	World Bank (2021)	78.60	49.44	-10.15	218.3	404
Urban Population	Percentage of Total Population	World Bank (2021)	67.35	18.64	26.61	92.42	432
Total Population	Logarithmic Form	World Bank (2021)	18.16	1.266	15.52	21.05	432
Trade Openness	Percentage of Gross Domestic Product	World Bank (2021)	66.67	37.83	15.64	220.4	427
Economic Freedom	Index from 0 to 10	Gwartney et al. (2019)	6.285	0.934	2.880	7.680	417
Business Regulations	Index from 0 to 10	Gwartney et al. (2019)	5.594	1.347	2.010	8.510	417
Trade Globalization	Index from 0 to 100	Gygli et al. (2019)	51.06	16.16	19.38	83.08	432
Financial Globalization	Index from 0 to 100	Gygli et al. (2019)	54.76	11.48	20.87	80.61	432
Social Globalization (Overall)	Index from 0 to 100	Gygli et al. (2019)	59.36	12.55	20.80	86.57	432
Social Globalization (De Facto)	Index from 0 to 100	Gygli et al. (2019)	56.62	14.40	14.87	89.19	432
Social Globalization (De Jure)	Index from 0 to 100	Gygli et al. (2019)	62.14	12.36	25.60	86.06	432
Interpersonal Globalization (De Facto)	Index from 0 to 100	Gygli et al. (2019)	43.77	19.28	7.720	87.56	432
Interpersonal Globalization (De Jure)	Index from 0 to 100	Gygli et al. (2019)	56.90	15.01	14.56	85.01	432
Informational Globalization (De Facto)	Index from 0 to 100	Gygli et al. (2019)	71.69	14.31	27.81	97.03	432
Informational Globalization (De Jure)	Index from 0 to 100	Gygli et al. (2019)	67.16	11.80	27.25	89.81	432
Cultural Globalization (De Facto)	Index from 0 to 100	Gygli et al. (2019)	54.42	14.93	9.081	88.09	432
Cultural Globalization (De Jure)	Index from 0 to 100	Gygli et al. (2019)	62.37	14.54	26.44	91.61	432
Political Regimes	Index from 0 to 5	Bjørnskov and Rode (2020)	2.006	1.253	0.000	5.000	432
Typology of Political Institutions	Index from 0 to 3	Bjørnskov and Rode (2020)	2.439	1.003	0.000	3.000	432
Alternation	Dummy Variable	Bjørnskov and Rode (2020)	0.694	0.461	0.000	1.000	432
Multiparty	Dummy Variable	Bjørnskov and Rode (2020)	0.870	0.336	0.000	1.000	432

Free and Fair Election	Dummy Variable	Bjørnskov and Rode (2020)	0.761	0.426	0.000	1.000	432
Democracy (Machine-Learning Based)	Index from 0 to 1	Gründler and Krieger (2016)	0.771	0.316	0.003	1.000	432
Polity 2	Index from -10 to 10	Marshall et al. (2019)	4.883	5.506	-10.00	9.000	432
Level of Institutionalized Democracy	Index from 0 to 10	Marshall et al. (2019)	6.198	2.942	0.000	9.000	432
Executive Constraints Concept	Index from 1 to 7	Marshall et al. (2019)	5.347	1.651	1.000	7.000	432

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**Table 2**  
**Correlation Matrix**

Regressors	Log CIT	Log CITPC	Log GPR	Log Per Capita GDP	Lending Interest Rate (%)
Log CITT	1.000	–	–	–	–
Log CITTPC	0.505	1.000	–	–	–
Log GPR	–0.013	–0.018	1.000	–	–
Log Per Capita GDP	0.112	0.774	0.054	1.000	–
Lending Interest Rate (%)	–0.102	–0.098	–0.028	–0.012	1.000

**Table 3****Capital Investment in Travel and Tourism: FE Estimations (1995–2018)**

	(1)	(2)
Lagged Dependent Variable	0.738*** (0.047)	0.731*** (0.045)
lnGPR <sub>t</sub>	-0.210*** (0.050)	–
lnGPR <sub>t-1</sub>	–	-0.187*** (0.048)
Log Per Capita GDP	0.290*** (0.077)	0.301*** (0.079)
Lending Interest Rate (%)	-0.468** (0.189)	-0.513** (0.197)
Constant Term	-1.072* (0.589)	-1.253* (0.651)
Observations	382	382
Number of Countries	17	17
R-Squared (Within)	0.841	0.837

Notes: The dependent variable is the log CITT. The robust standard errors are in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

**Table 4****Capital Investment in Travel and Tourism per Capita: FE Estimations (1995–2018)**

	(1)	(2)
Lagged Dependent Variable	0.726*** (0.048)	0.715*** (0.046)
lnGPR <sub>t</sub>	-0.215*** (0.052)	–
lnGPR <sub>t-1</sub>	–	-0.202*** (0.050)
Log Per Capita GDP	0.257*** (0.070)	0.269*** (0.070)
Lending Interest Rate (%)	-0.424** (0.196)	-0.476** (0.203)
Constant Term	-0.071 (0.496)	-0.191 (0.537)
Observations	382	382
Number of Countries	17	17
R-Squared (Within)	0.804	0.800

Notes: The dependent variable is log CITTPC. The robust standard errors are in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

**Table 5**  
**Including the Role of Social Globalization: FE Estimations (1995–2018)**

Sensitivity Analysis:	Regressors	CITT	CITTPC
Results of Benchmark Regression	lnGPR <sub>t</sub>	-0.210*** (0.050)	-0.215*** (0.052)
Results of Benchmark Regression	lnGPR <sub>t-1</sub>	-0.187*** (0.048)	-0.202*** (0.050)
Including Index of Social Globalization (Overall)	lnGPR <sub>t</sub>	-0.207*** (0.049)	-0.206*** (0.051)
Including Index of Social Globalization (Overall)	lnGPR <sub>t-1</sub>	-0.183*** (0.049)	-0.191*** (0.050)
Including Index of Social Globalization (De Facto)	lnGPR <sub>t</sub>	-0.210*** (0.049)	-0.213*** (0.051)
Including Index of Social Globalization (De Facto)	lnGPR <sub>t-1</sub>	-0.187*** (0.048)	-0.199*** (0.049)
Including Index of Social Globalization (De Jure)	lnGPR <sub>t</sub>	-0.205*** (0.050)	-0.204*** (0.052)
Including Index of Social Globalization (De Jure)	lnGPR <sub>t-1</sub>	-0.181*** (0.050)	-0.189*** (0.050)
Including Index of Interpersonal Globalization (De Facto)	lnGPR <sub>t</sub>	-0.226*** (0.046)	-0.227*** (0.049)
Including Index of Interpersonal Globalization (De Facto)	lnGPR <sub>t-1</sub>	-0.208*** (0.044)	-0.218*** (0.046)
Including Index of Interpersonal Globalization (De Jure)	lnGPR <sub>t</sub>	-0.212*** (0.052)	-0.211*** (0.053)
Including Index of Interpersonal Globalization (De Jure)	lnGPR <sub>t-1</sub>	-0.190*** (0.051)	-0.197*** (0.051)
Including Index of Informational Globalization (De Facto)	lnGPR <sub>t</sub>	-0.212*** (0.049)	-0.216*** (0.052)
Including Index of Informational Globalization (De Facto)	lnGPR <sub>t-1</sub>	-0.190*** (0.049)	-0.203*** (0.050)
Including Index of Informational Globalization (De Jure)	lnGPR <sub>t</sub>	-0.186*** (0.046)	-0.187*** (0.048)
Including Index of Informational Globalization (De Jure)	lnGPR <sub>t-1</sub>	-0.158*** (0.042)	-0.168*** (0.043)
Including Index of Cultural Globalization (De Facto)	lnGPR <sub>t</sub>	-0.204*** (0.048)	-0.209*** (0.050)
Including Index of Cultural Globalization (De Facto)	lnGPR <sub>t-1</sub>	-0.187*** (0.046)	-0.203*** (0.048)
Including Index of Cultural Globalization (De Jure)	lnGPR <sub>t</sub>	-0.212*** (0.047)	-0.217*** (0.050)
Including Index of Cultural Globalization (De Jure)	lnGPR <sub>t-1</sub>	-0.188*** (0.048)	-0.203*** (0.050)

Notes: Main control variables are included. The standard errors are in the parentheses. \*\*\* p<0.01.

**Table 6****Capital Investment in Travel and Tourism (CITT): FE Estimations (1995–2018)**

Variables	(KOF SOGI)	(KOF SOGIDF)	(KOF SOGIDJ)	(KOFIPGI)	(KOFINGI)	(KOF CUGI)
Lagged Dependent Variable	0.741*** (0.040)	0.737*** (0.045)	0.746*** (0.036)	0.726*** (0.039)	0.750*** (0.039)	0.741*** (0.045)
Log Per Capita GDP	0.269** (0.116)	0.266** (0.108)	0.267** (0.097)	0.201** (0.084)	0.329** (0.128)	0.292*** (0.084)
Lending Interest Rate (%)	-0.489* (0.234)	-0.477** (0.218)	-0.495** (0.232)	-0.433** (0.199)	-0.540** (0.231)	-0.501** (0.217)
Social Globalization Indicator	-0.043*** (0.010)	-0.033*** (0.010)	-0.048*** (0.010)	-0.031*** (0.008)	-0.053*** (0.012)	-0.034** (0.013)
lnGPR <sub>t</sub>	-0.784*** (0.152)	-0.626*** (0.154)	-0.886*** (0.158)	-0.613*** (0.113)	-0.982*** (0.212)	-0.631*** (0.181)
Social Globalization Indicator * lnGPR <sub>t</sub>	0.009*** (0.002)	0.007** (0.002)	0.010*** (0.002)	0.007*** (0.002)	0.011*** (0.003)	0.007** (0.002)
Constant Term	Yes	Yes	Yes	Yes	Yes	Yes
County Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	382	382	382	382	382	382
Number of Countries	17	17	17	17	17	17
R-squared (within)	0.845	0.843	0.846	0.845	0.847	0.843

Notes: The dependent variable is the log CITT. KOF SOGI: KOF Index of Social Globalization (Overall), KOF SOGIDF: Social Globalization (De Facto), KOF SOGIDJ: Social Globalization (De Jure), KOFIPGI: Interpersonal Globalization, KOFINGI: Informational Globalization, KOF CUGI: Cultural Globalization. The robust standard errors are in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

**Table 7****Capital Investment in Travel and Tourism Per Capita (CITTPC): FE Estimations (1995–2018)**

Variables	(KOF SOGI)	(KOF SOGIDF)	(KOF SOGIDJ)	(KOFIPGI)	(KOFINGI)	(KOF CUGI)
Lagged Dependent Variable	0.730*** (0.043)	0.723*** (0.047)	0.735*** (0.038)	0.718*** (0.043)	0.735*** (0.041)	0.728*** (0.046)
Log Per Capita GDP	0.289** (0.113)	0.270** (0.097)	0.271** (0.093)	0.202** (0.079)	0.342** (0.123)	0.278*** (0.076)
Lending Interest Rate (%)	-0.489* (0.289)	-0.455* (0.234)	-0.499* (0.241)	-0.416* (0.218)	-0.522** (0.241)	-0.484** (0.227)
Social Globalization Indicator	-0.050*** (0.009)	-0.039*** (0.010)	-0.054*** (0.010)	-0.036*** (0.008)	-0.059*** (0.012)	-0.040*** (0.013)
lnGPR <sub>t</sub>	-0.836*** (0.158)	-0.685*** (0.161)	-0.930*** (0.163)	-0.649*** (0.120)	-1.046*** (0.221)	-0.698*** (0.187)
Social Globalization Indicator * lnGPR <sub>t</sub>	0.010*** (0.002)	0.008*** (0.002)	0.011*** (0.002)	0.008*** (0.002)	0.011*** (0.003)	0.008*** (0.002)
Constant Term	Yes	Yes	Yes	Yes	Yes	Yes
County Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	382	382	382	382	382	382
Number of Countries	17	17	17	17	17	17
R-squared (within)	0.810	0.808	0.812	0.809	0.814	0.807

Notes: The dependent variable is the log CITTPC. KOF SOGI: KOF Index of Social Globalization (Overall), KOF SOGIDF: Social Globalization (De Facto), KOF SOGIDJ: Social Globalization (De Jure), KOFIPGI: Interpersonal Globalization, KOFINGI: Informational Globalization, KOF CUGI: Cultural Globalization.

The robust standard errors are in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

**Table 8****Capital Investment in Travel and Tourism: LSDVC Estimations (1995–2018)**

	(1)	(2)	(3)
Lagged Dependent Variable	0.940*** (0.019)	0.848*** (0.025)	0.851*** (0.023)
lnGPR <sub>t</sub>	-0.181*** (0.041)	-0.193*** (0.047)	-0.217*** (0.050)
Log Per Capita GDP	–	0.265*** (0.054)	0.158*** (0.024)
Lending Interest Rate (%)	–	–	-0.505*** (0.135)
Observations	414	410	382
Number of Countries	18	18	17
AR (1)	-4.89 [0.000]	-4.16 [0.000]	-3.59 [0.000]
AR (2)	0.33 [0.741]	0.22 [0.852]	0.39 [0.702]
Sargan Test	15.9 [0.999]	19.2 [0.999]	14.9 [0.999]

Notes: The dependent variable is log CITT. The robust standard errors are in parentheses, and the p-values are in brackets. \*\*\* p<0.01.

**Table 9****Capital Investment in Travel and Tourism per Capita: LSDVC Estimations (1995–2018)**

	(1)	(2)	(3)
Lagged Dependent Variable	0.925*** (0.022)	0.816*** (0.029)	0.804*** (0.027)
lnGPR <sub>t</sub>	-0.187*** (0.041)	-0.198*** (0.045)	-0.219*** (0.048)
Log Per Capita GDP	–	0.259*** (0.056)	0.173*** (0.058)
Lending Interest Rate (%)	–	–	-0.449*** (0.128)
Observations	414	410	382
Number of Countries	18	18	17
AR (1)	-4.54 [0.000]	-4.27 [0.000]	-4.06 [0.000]
AR (2)	0.36 [0.721]	0.49 [0.625]	0.38 [0.705]
Sargan Test	14.8 [0.999]	19.5 [0.999]	14.1 [0.999]

Notes: The dependent variable is log CITTPC. The robust standard errors are in parentheses, and the p-values are in brackets. \*\*\* p<0.01.

## Appendix I

### Including Additional Control variables: FE Estimations (1995–2018)

Sensitivity Analysis:	Regressors	CITT	CITTPC
Results of Benchmark Regression	lnGPR <sub>t</sub>	-0.210*** (0.050)	-0.215*** (0.052)
Results of Benchmark Regression	lnGPR <sub>t-1</sub>	-0.187*** (0.048)	-0.202*** (0.050)
Including Domestic Credit Provided by Financial Sector	lnGPR <sub>t</sub>	-0.200*** (0.055)	-0.208*** (0.058)
Including Domestic Credit Provided by Financial Sector	lnGPR <sub>t-1</sub>	-0.179*** (0.051)	-0.194*** (0.053)
Including Urban Population	lnGPR <sub>t</sub>	-0.207*** (0.050)	-0.212*** (0.053)
Including Urban Population	lnGPR <sub>t-1</sub>	-0.178*** (0.048)	-0.192*** (0.052)
Including Total Population	lnGPR <sub>t</sub>	-0.212*** (0.050)	-0.212*** (0.050)
Including Total Population	lnGPR <sub>t-1</sub>	-0.198*** (0.049)	-0.197*** (0.049)
Including Trade Openness	lnGPR <sub>t</sub>	-0.216*** (0.049)	-0.223*** (0.052)
Including Trade Openness	lnGPR <sub>t-1</sub>	-0.193*** (0.048)	-0.211*** (0.051)
Including Index of Trade Globalization	lnGPR <sub>t</sub>	-0.216*** (0.050)	-0.220*** (0.053)
Including Index of Trade Globalization	lnGPR <sub>t-1</sub>	-0.195*** (0.051)	-0.209*** (0.053)
Including Index of Financial Globalization	lnGPR <sub>t</sub>	-0.210*** (0.050)	-0.214*** (0.051)
Including Index of Financial Globalization	lnGPR <sub>t-1</sub>	-0.187*** (0.049)	-0.200*** (0.050)
Including Index of Economic Freedom	lnGPR <sub>t</sub>	-0.213*** (0.052)	-0.217*** (0.054)
Including Index of Economic Freedom	lnGPR <sub>t-1</sub>	-0.192*** (0.052)	-0.205*** (0.054)
Including Index of Business Regulations	lnGPR <sub>t</sub>	-0.208*** (0.048)	-0.214*** (0.051)
Including Index of Business Regulations	lnGPR <sub>t-1</sub>	-0.185*** (0.045)	-0.200*** (0.047)

Notes: Main control variables are included. The standard errors are in the parentheses. \*\*\* p<0.01.

## Appendix II

### Sensitivity Analysis: FE Estimations (1995–2018)

Sensitivity Analysis	Regressors	CITT	CITTPC
Results of Benchmark Regression	$\ln\text{GPR}_t$	-0.210*** (0.050)	-0.215*** (0.052)
Results of Benchmark Regression	$\ln\text{GPR}_{t-1}$	-0.187*** (0.048)	-0.202*** (0.050)
Excluding Extreme Units of Capital Investment in Travel and Tourism	$\ln\text{GPR}_t$	-0.203*** (0.058)	-0.201*** (0.053)
Excluding Extreme Units of Capital Investment in Travel and Tourism	$\ln\text{GPR}_{t-1}$	-0.191*** (0.058)	-0.190*** (0.051)
Excluding Extreme Units of the Index of GPR	$\ln\text{GPR}_t$	-0.196*** (0.065)	-0.205*** (0.066)
Excluding Extreme Units of the Index of GPR	$\ln\text{GPR}_{t-1}$	-0.176*** (0.067)	-0.193*** (0.072)
Excluding High-income Economies	$\ln\text{GPR}_t$	-0.214*** (0.052)	-0.220*** (0.056)
Excluding High-income Economies	$\ln\text{GPR}_{t-1}$	-0.184*** (0.051)	-0.201*** (0.054)
Excluding Middle Eastern Countries	$\ln\text{GPR}_t$	-0.204*** (0.051)	-0.210*** (0.054)
Excluding Middle Eastern Countries	$\ln\text{GPR}_{t-1}$	-0.177*** (0.049)	-0.193*** (0.052)
Excluding Latin American Countries	$\ln\text{GPR}_t$	-0.253*** (0.028)	-0.250*** (0.032)
Excluding Latin American Countries	$\ln\text{GPR}_{t-1}$	-0.250*** (0.035)	-0.258*** (0.037)
Excluding Eastern Europe Countries	$\ln\text{GPR}_t$	-0.217*** (0.067)	-0.223*** (0.070)
Excluding Eastern Europe Countries	$\ln\text{GPR}_{t-1}$	-0.208*** (0.064)	-0.219*** (0.066)
Excluding African Countries	$\ln\text{GPR}_t$	-0.214*** (0.051)	-0.221*** (0.053)
Excluding African Countries	$\ln\text{GPR}_{t-1}$	-0.188*** (0.050)	-0.205*** (0.052)

Notes: Main control variables are included. The standard errors are in the parentheses. \*\*\*  $p < 0.01$ .