GEOPOLITICAL RISKS AND INTERNATIONAL TOURIST ARRIVALS TO TURKEY: A CAUSALITY STUDY

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Abstract

This study aimed to examine the causal connection between geopolitical risks and Turkey's international tourist arrivals. The causality was tested between risk indices and foreign visitor demand on monthly data. Turkey was selected because many geopolitical risks had occurred in the last two decades and has had a terror risk named PKK for many years. The geopolitical risk indices were created from news based on the issues. The causality was tested using Toda-Yamamoto and asymmetric causality was tested using the Hatemi-J method in the period of 1998-2019. Findings of the study showed that there is unidirectional causality between global risks and tourist arrivals to Turkey, and bi-directional causality between domestic risk and tourist arrivals. Hatemi-J test results support the findings that the causality from positive shocks of risks causes negative shocks of tourist arrivals and vice versa. Herewith, it can be said that tourism demand to Turkey, in the context of foreign visitors, was affected by global or domestic geopolitical risks. This may be a sign that Turkey has a tourism-led terrorism problem targeting Turkey's tourism and economy.

Keywords: Geopolitical risks; International tourist demand; Tourist destination image.

RISCOS GEOPOLÍTICOS E CHEGADAS TURÍSTICAS INTERNACIONAIS À TURQUIA: UM ESTUDO DE CAUSALIDADE

Resumo

Este estudo teve como objetivo examinar a conexão causal entre os riscos geopolíticos e as chegadas de turistas internacionais na Turquia. A causalidade foi testada entre índices de risco e demanda de visitantes estrangeiros em dados mensais. A Turquia foi selecionada porque muitos riscos geopolíticos ocorreram nas últimas duas décadas e há muitos anos o risco de terrorismo chamado PKK. Os índices de risco geopolítico foram criados a partir de notícias baseadas nas questões. A causalidade foi testada usando Toda-Yamamoto e causalidade assimétrica foi testada usando o método Hatemi-J no período de 1998-2019. Os resultados do estudo mostraram que existe uma causalidade unidirecional entre os riscos globais e as chegadas de turistas à Turquia, e uma causalidade bidirecional entre o risco doméstico e as chegadas de turistas. Os resultados do teste Hatemi-J apóiam as conclusões de que a causalidade de choques positivos de riscos causa choques negativos nas chegadas de turistas e vice-versa. Com isto, pode-se dizer que a demanda turística para a Turquia, no contexto de visitantes estrangeiros, foi afetada por riscos geopolíticos globais ou domésticos. Isso pode ser um sinal de que a Turquia tem um problema de terrorismo impulsionado pelo turismo que visa o turismo e a economia turcos.

Palavras-chave: Riscos geopolíticos; Demanda turísticainternacional; Imagem do destino turístico.

RIESGOS GEOPOLÍTICOS Y LLEGADAS TURÍSTICAS INTERNACIONALES A TURQUÍA: UN ESTUDIO DE CAUSALIDAD

Resumen

Este estudio tuvo como objetivo examinar la conexión causal entre los riesgos geopolíticos y las llegadas de turistas internacionales a Turquía. La causalidad se probó entre los índices de riesgo y la demanda de visitantes extranjeros con datos mensuales. Turquía fue seleccionada porque se habían producido muchos riesgos geopolíticos en las últimas dos décadas y ha tenido un riesgo terrorista llamado PKK durante muchos años. Los índices de riesgo geopolítico se crearon a partir de noticias basadas en los problemas. La causalidad fue probada usando Toda-Yamamoto y la causalidad asimétrica fue probada usando el método Hatemi-J en el período 1998-2019. Los resultados del estudio mostraron que existe una causalidad unidireccional entre los riesgos globales y las llegadas de turistas a Turquía, y una causalidad bidireccional entre el riesgo nacional y las llegadas de turistas. Los resultados de la prueba Hatemi-J apoyan los hallazgos de que la causalidad de los choques positivos de riesgos causa choques negativos en las llegadas de turistas y viceversa. A continuación, se puede decir que la demanda turística de Turquía, en el contexto de los visitantes extranjeros, se vio afectada por riesgos geopolíticos globales o nacionales. Esto puede ser una señal de que Turquía tiene un problema de terrorismo liderado por el turismo que tiene como objetivo el turismo y la economía de Turquía.

Palabras clave: Riesgos geopolíticos; Demanda turística internacional; Imagen de destino turístico.

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1 INTRODUCTION

It is a known fact that tourism is quite sensitive to country-of-origin and country-of-destination factors in terms of tourist mobility. It is also known that the increased risk perception of tourists can negatively affect tourism activities (Koç & Villi, 2021). At this point, the sources that may cause this risk perception draw attention.

The source of information that pulls the tourists to the destination is mostly news and the information they have obtained about the destination. From this perspective, how the perception of security affects tourism demand is a complex issue. In this context what are the factors that make a destination insecure; violence, theft, sexual crimes, fatal accidents or more than these terrorism and war risks?

Success in tourism stems from providing safe destinations to visitors, as it is been put forth by many studies (Pizam and Mansfeld, 2006; Karakuş, 2015; Afonso-Rodríguez & Santana-Gallego, 2018). For countries, the struggle against violence and crime is carried out not only for the safety of tourists but also for citizens. However, countries with intense tourism activities take more care than other places to ensure the safety of tourist destinations. But this does not make any difference in the method of terrorism to target a destination or country because terrorism is located in the opposite of peace and security.

The theory of tourist safety and security covers all the subjects in which a tourist could be a target or a victim (Neumayer & Plümper, 2016; Pizam & Mansfeld, 2006). When tourists are faced with any crime committed by a citizen or another tourist, it causes the destination to be perceived unsafe.

Pizam and Mansfeld (2006: 7) stated that security incidents cause changes in tourists' perception of risk. This may cause the tourist not to consider the destination even as an alternative for travel (Karakuş & Kalay, 2017). But this perception of security risk can differ towards country-of-destination (Ghaderi, Saboori & Khoshkam, 2017), which is also proved by Mawby (2000) and Fuchs, Uriely, Reichel and Maoz (2013).

In any case, risk perception affects travel decisions, such as cancelling booked travels, avoiding bookings to affected locations, or shifting travel to a safer place (Pizam & Mansfield, 2006) e.g. just as terrorism and security issues in the MENA region resulted in tourists shifting to Spain (Afonso-Rodríguez & Santana-Gallego, 2018). Tarlow (2014) points out that those tourists often assume destinations are safe besides other reasons.

Coca-Stefaniak & Morrison (2018, 410) point out that whether fake news on terror incidents via social media and online media channels results in aftershocks such as an earthquake. Besides providing evidence on this, Cassinger et al., (2018) showed that terrorist attacks affect cities differently according to the image of the city as a tourism destination. Thus, they concluded that if the general image of the city is perceived positively by tourists, they will still travel.

On the other hand, during times of terrorist attacks, destination management offices do not effectively use social media, which is one of the primary tools for people to seek information about crises, and during this crisis time social media can be an effective tool for real-time communication (Barbe et al., 2018).

People search for information about destinations using different channels to plan a trip, e.g., social media, news sites, travel blogs and others. Naturally, tourists can have a risk perception in line with the information they have acquired. The question to be asked in this context is as follows: If the risks of terrorism and war increase about a destination will it decrease the tourism demand for that destination?

The risks of war and terrorist attacks towards a country can be significantly high due to geopolitical reasons. Risks of war and terrorist attacks for a country may increase due to geopolitical reasons. One of the best examples of this is "Arab Spring". The Syrian Civil War that started in 2011 is the result of the contagious effect of the Arab Spring, attributed as insurgencies in Tunisia and Egypt as a source, the revolutionary wave in the Middle East and North Africa (MENA) region (Alp Koçak, 2012; Joffé, 2011; Lawson & H., 2014; Özdemir, 2016).

Well then how can we measure or know the risks of terrorist attacks and war for a country or destination to plan a trip? One possible source for this is the news that is written on media. The first step of choosing a destination to travel is to search information about destinations by using different channels.

One of the sources of information is the media, especially social media, online media channels, and news sites. From this point, terrorism and war news on the media can be seen as one of the initial sources. Nowadays, social media is almost the main source of access to news and events, especially after events realized (Szajkowski, 2011), but still, tools for news and events are traditional printed or online media. Within this scope, Caldara & Iacoviello (2019) developed a Geopolitical Risk Index (GPR Index) calculated by counting the number of articles as a share of the total number of news articles related to geopolitical risk in eleven US and international newspapers for each month.

The GPR Index is based on automated text-search results of the electronic archives of each newspaper. Terms in search are determined according to the calculated index; e.g. "geopolitical tension",

"atomic fear", "war risk", "terrorist menace" for GPR Threats Index, and "beginning/outbreak/start/escalation of the war", "terrorist act/acts" for GPR Act Index (Caldara and Lamoriello, 2019, 7).

This risk index is used to see the relations or effect of risks on growth (Akadiri, Eluwole, Akadiri, & Avci, 2020), stock returns (Alqahtani, Bouri, & Vo, 2020; Hoque & Zaidi, 2020; Jiang, Tian, Wu, & Mo, 2020), oil prices (Antonakakis, Gupta, Kollias, & Papadamou, 2017; Mei, Ma, Liao, & Wang, 2020), and in hedging studies (Baur & Smales, 2020).

Based on the paragraphs mentioned above, this study aims to determine causal relationships between geopolitical risks and international tourist arrivals in Turkey. Tourism security theory suggests that the risks to war and terrorism will discourage tourists from visiting intent (Neumayer & Plümper, 2016; Pizam & Mansfeld, 2006), although there are reverse findings (Fuchs et al., 2013; Ghaderi et al., 2017; Mawby, 2000) in literature.

In this current study, we aim to determine causal connections of increases and decreases in geopolitical risks and international tourist arrivals by modeling global geopolitical risk, Turkey's geopolitical risk, global geopolitical risk threats, and global geopolitical acts risk indices separately. This allows tourists to assess whether Turkey is an attractive destination or not, and whether Turkey is perceived as one of the safe destinations. Third, provides to find out which have "the threat or act" causal connections in tourism demand. Fourth, which of the global or local risks is more effective for international tourist arrivals in Turkey? Turkey was the sixth most visited country with 51 million foreign visitor arrivals in 2019 (UNWTO, 2020).

In this context, this study was structured in six sections. After a brief introduction, in the second section tourism demand, security perception of tourists was debated theoretically in a limited view, and cases and incidents related to geopolitical risks for Turkey in the study period were mentioned, shortly. While section three covered the literature review, the methodology and findings were presented in section four. Lastly, in section five the findings were discussed within the theory and literature, and some inferences were made.

2 SECURITY PERCEPTION, TOURISM DEMAND, GEOPOLITICAL RISKS FOR TURKEY

Tourism demand is affected by many economic (Ali Ibrahim, 2011; Crouch, 1995; Furmolly & Kırkulak Uludağ, 2018; Schenkel and Ercolani, 2018) and non-economic factors such as distance and aircraft departures, employment status or level of education (Cho, 2010; Schenkel and Ercolani, 2018). Factors that

affect tourism demand may also be grouped concerning country-of-origin and country-of-destination (Crouch, 1995: 116).

Many country-of-destination specific factors that affect tourists' destination choice can be listed as follows: natural disasters, political issues (Karakuş & Kalay, 2017; Yenişehirlioğlu, Salha, & Şahin, 2016), outbreaks like COVID-19, SARS, MERS etc., (Dwyer, Forsyth, & Spurr, 2008; Günay, Bayraktaroğlu, & Özkul, 2020; Min, Lim, & Kung, 2011; Vidal, Paim, Nassar, & Simonetti, 2021), international events like festivals, carnivals, or Olympics (Fourie & Santana-Gallego, 2011; Getz, 2008) and other attractions etc.

On the other hand, some other factors like distance are not only deterministic variables on tourism demand but have an impact on travel choice (Cho, 2010; McKercher & Mak, 2019). So, issues and factors such as macroeconomic, natural disasters, international sports events, policy or security-based incidents affect tourism demand towards a country.

The literature on tourism economics has shown that terrorism has a detrimental effect on tourist arrivals in countries with persistent incidents. On the contrary, a country perceived as safe can gain advantages. In the MENA (Middle East and North Africa) region which experienced the Arab Spring after 2010, tourist arrivals decreased. On the other hand, tourists shifted to destinations perceived as safe, such as Spain (Afonso-Rodríguez & Santana-Gallego, 2018).

Tourists take into account crime and other safety concerns as a salient issue and tend to adjust travel plans to maximize safety. Hence, tourists often consider the perceived safety of a country in their destination choice. However, tourists may irrationally demonstrate a low level of concern on fear and feel that destinations are safe (Mawby, 2000).

This might be the result that tourists trust that the destinations are secured due to the touristic activities. On the other hand, it may be depended on the source of risks that tourists can face, e.g. risk of terrorism has been perceived higher than others due to the terrorist attack occurrence (Mawby, 2000). So, this can be said that the risk of terrorism and war is more influential than other crimes on tourists perception of risks that affect the destination choice (Karakuş, 2015).

However, global or domestic geopolitical risks such as wars, terrorist acts and ethnic and political violence and tensions have affected tourism demand minimally for countries that have attractive tourism destinations (Balli et al., 2019: 8).

Despite governmental travel advisories, tourists may behave unexpectedly irrational in the context of "terrorism and security", as seen in the study of Balli et al. (2019). Tourists may choose to rationalize their perception by believing the media plays an important

role in giving a wrong and overly negative impression regarding the level of risk (Fuchs et al., 2013).

Tourist inflows to a country are affected by terrorist attacks. Terrorist attacks sometimes target tourists directly and sometimes aim at reducing visitor inflows to cause problems for the national economy. As an example showing that terrorism also affects outflows on tourism, the Caribbean experienced a 13.5% decline in US visitors after the 9/11 terrorist attack (Korstanje & Clayton, 2012).

In other words, terrorist attacks in a country also shock the behavior of tourists and cause a change in the image profile of the destination (Araña & León, 2008). Therefore, although there are reverse findings, the risk of terrorism is important not only for country-of-destination but also for country-of-origin.

Terrorism aims to create a culture of fear by creating an environment of indiscriminate death and chaos, and in this way destroy economies or the political mechanism (cambridge.org, 2021; Tarlow, 2014). Turkey is one of the emerging and fragile economies due to the current account deficit, inflation pressure and reliance heavily on foreign investments for growth, along with other factors (Lord & Rahman, 2013).

On the other hand, the phenomenon of tourism is the opposite of terrorism. While tourism contributes to world peace, it comes to life in an environment of peace. Terrorist attacks, which sometimes aim directly at tourists or aim at hampering visitor inflows, affect hospitality and tourism companies' share returns. Thus, as (Madanoglu, Olsen, & Kwansa, 2007) pointed out, terrorist organizations can harm target economies.

Turkey suffers from terrorist organizations such as PKK, which was established in 1978 clandestinely to make a communist revolution by guerrilla warfare and realize the mission of founding a separate Kurdish state in southeastern Turkey (Criss, 1995). PKK has been posing threats since the last quarter of the 20th century and continuing its terrorist attacks using many different methods such as suicide bombing since the mid-1990s (Ergil, 2000). Turkey was faced with security threats in the mid-2010s which came essentially from the Syrian regime itself, its allies on the ground, and armed terrorist groups like ISIS and PYD/YPG (Parlar Dal, 2016).

Although Turkey is a destination which has very high potential in terms of tourism, Turkish tourism suffered from terrorist attacks, directly or indirectly, many times in the last two decades. Especially in countries where tourism revenues are of high importance in their economy, the possibility that tourism will be the target of terrorist attacks increases.

In 2005 and 2006, a series of terrorist attacks were organized by PKK and its extensions in Istanbul

and in the southern shore of Turkey, namely Kusadasi, Cesme, Marmaris and Antalya which are the main tourism destinations. In these attacks, terrorists targeted the tourists directly. Also, in 2006, the pastor of the Santa Maria Catholic Church in Trabzon Andrea Santoro was killed by a Fethullahist Terrorist Organization (FETO) linked armed attack. These terror attacks were accepted as the main determinants of the decline in foreign arrivals to Turkey in 2006.

Also, Turkey has been located in one of the strategic risks-intense areas, especially since 2011 when a civil war erupted in Syria (Kako, 2020). As one of the primary results of the Syrian civil war, the Islamic State in Iraq and Syria (ISIS) terrorist group rose in Iraq and Syria (Parlar Dal, 2016: 1396) which later organized terrorist attacks in Turkey and European Union. In the early stages of the Syrian Civil War, foreign visitors to Turkey showed an almost vague increase in 2012 following the increase in prominence compared to previous years as a result of the geopolitical risk (Günay et al., 2020).

In 2015 and 2016, especially in 2016, ISIS and FETO coup-attempts were on stage, which affected Turkish tourism to downsize dramatically. In November 2015, an incident named "the Plane Crisis" (Abdullah & Babaç, 2016: 2140) which took place between Turkey and Russia influenced Turkish foreign tourist arrivals, particularly from Russia. As a result of the plane crisis, Russia restricted the chartered flights to Turkey till the end of August 2016.

Russia is the main tourism market of Turkish tourism, and Moscow's attitude in this crisis has greatly affected the number of tourists coming to Turkey. There was another risk for Turkey in 2016, ISIS, which targeted directly the touristic places and governmental structures in Istanbul. Well-known and most used places, Sultanahmet Square, Istiklal Street, Ataturk Airport and Besiktas Stadium, were the targets of suicide terror attacks targeting both tourists and civilians by ISIS.

Also in that year, Kızılay Square in Ankara was targeted by another terrorist group, namely PKK - PYD/YPG. There were other terrorist attacks committed by ISIS and PKK - PYD/YPG in some south and southeastern cities which are also touristic cities of Turkey. But another massive effect besides Russia's flight restrictions happened after the coup attempt organized by the Parallel State Structure/FETO in July 2016.

This coup attempt was one of the biggest crises seen in Turkey in the last 35 years and affected tourist arrivals dramatically. After political stability, foreign arrivals to Turkey reached over 32,4 million in 2017, 39,4 million in 2018 and 45 million in 2019 (Günay et al., 2020). Turkey, as a country next to the conflict zone

in the Syrian civil war, is affected by terrorist formations directly and indirectly in the bad neighborhood. As a result of this bad neighborhood effect, especially during 2015 and 2016, the spread of the Syrian conflict into Turkey accelerated and created important consequences of violence coming from ISIS and the PKK-PYD/YPG (Parlar Dal, 2016).

3 LITERATURE REVIEW

Studies on the determinants of tourism demand towards a destination are in a wide range. Some studies focus on personal factors such as income, time, and other demographic factors that affect tourism demand. While some studies focus on push factors mentioned before, several studies conduct on pull factors such as culture or facilities in a destination.

Besides these pushes and pull factors, some factors influence destinations' tourist arrivals. Distance is one of the key factors which affect travel to a destination by not only affecting transportation costs (McKercher & Mak, 2019) but also requiring additional time.

On the other hand, investigating factors affecting tourist safety and the perception of security are among fundamental research topics in the tourism demand literature. This study focuses on tourism demand by the causal link between risk indices and international tourist arrivals.

Risk indices are selected as overall global geopolitical risk, overall geopolitical risk threats, overall geopolitical risk acts, and Turkey-specific geopolitical risk. Researches related to the aim of this study are summarized below.

A study conducted by Afonso-Rodríguez & Santana-Gallego (2018) investigated the effect of the Arab Spring on Spain tourism demand. The study focuses on the effects of security risks that occurred in the MENA region on Spain's tourist arrivals.

The MENA as part of the Mediterranean area in which Spain takes place is one of the main destinations for tourists, especially in its summer season. The risk data of the study are obtained from the Global Terrorism Database for eight countries (Bahrain, Egypt, Jordan, Libya, Syria, Tunisia, Turkey, and Yemen).

In the study covering the full period of 2000M7 – 2015M12, the risk period is selected as 2010M1-2015M1 for the MENA region incidents. Issues as a proxy of terrorism risk are taken into account as the number of terrorist attacks, the number of terrorist attacks with fatalities, and the number of fatalities in terrorist attacks.

The cointegration analysis was realized to obtain the empirical findings. One of the important results of the study is that MENA region countries are tourist competitors to Spain and when they are safe, tourist arrivals are fewer in Spain.

The second important finding by testing the 2008M1-2015M12 period is that there is a stable and positive long-run relationship between terrorism in MENA regions and tourist arrivals in Spain for both total arrivals and Spanish regions except Catalonia. As a result of this finding, the Arab Spring or terrorism and geopolitical risks have diverted tourists from the MENA region to Spain.

According to a similar result, terrorist attacks that took place in Turkey and Egypt affected positively Portuguese tourism demand (Trindade, 2017). Asongu et al., (2019) investigated the effect of terrorism and peace on tourist arrivals by panel data analysis for 163 countries in the period of 2010-2015.

They provided evidence that political instability, violent demonstrations, and the number of homicides affect tourist arrivals negatively whereas the number of incarcerations influences positively.

On the other hand, there is not a significant influence of military expenditures, measured by armed service personnel and security officers and policies. Santana-Gallego et al. (2016) examined the effect of terrorism, crime and corruption on tourist arrivals for 171 countries in the period of 1995–2013.

All sample analysis findings show that terrorism and crime have a negative effect on arrivals, but corruption has no significant effect. On the other hand, the effects were investigated through the data on tourist arrivals disaggregated by origin to see the effects and to compare instability in the destination and the origin country.

The findings exhibited that terrorism, crime and corruption in the destination harm tourist arrivals but that instability in the origin country has no clear effect on departures. As a result, tourists from safe and stable countries prefer travelling to the countries with the same level of safety and stable countries but tourists from unsafe and unstable countries are more tolerant of crime, terrorism and corruption in the destination country.

Casualties and fatalities from terrorism reduce tourism demand, and if these casualties and fatalities combined with travel warnings, it also decrease to a higher degree than in the case of events (Buigut et al., 2017: 1001). Between 1992 and 2011, the tourism demand from OECD countries to Turkey was not affected highly by terrorist attacks. Contrary to this finding, mostly supply capacity and following this, income and exchange rate have affected foreign visitor arrivals (Çelik & Karaçuka, 2017: 321).

Murat et al. (2013) determined that three of the ten major markets for Turkey have reacted negative permanent to the shocks in economic crises, natural

disasters and terrorist attacks in the period of 1996-2012 by unit-root test. Isaac & Velden (2018) investigated that the influence of terrorism on risk perception and attitudes of the German travel behavior towards Turkey.

In the study where the data was collected through an online survey between the end of August 2017 and early September 2017, it was determined that Turkey was considered as an unsafe destination among German people. Karaoğlu (2019) also reached a similar conclusion that the increase in the global terrorism index reduces tourist arrivals to Turkey.

Ferreira and Castro (2020) investigated the effect of terrorism and corruption on Turkey's tourist arrivals in the annual sample of the 1995-2005 years. The findings of the study showed that besides cultural and natural heritage, control of corruption affects international tourist arrivals positively, while terrorism affects negatively.

Neumayer and Plümper (2016) investigated the effects of transnational terrorist attacks on international tourism in the context of spatial spillover effects. The study findings showed that terrorist attacks towards tourists from Western countries especially in an Islamic country, therefore, do not reduce only tourist flows to the targeted destinations, but also tourist flows from the countries attacked.

In addition to this, flows from other similar countries to the attacked country, from the attacked country to similar destination countries and even from similar countries to similar destinations tend to reduce. Within the findings, they prove that there is a spatial spillover of terrorist attacks on tourism.

In a study conducted by Nikšić Radić et al. (2018), the causal relationship between terrorism and international tourist arrivals was explored in the sample of Italy, Spain, UK, Germany and Turkey destinations. They used the Granger causality and vector autoregressive model (VAR model) and carried out a variance decomposition analysis, as well as an impulse response function examination.

Study results have led to the conclusion that, along with the 'terrorism-led tourism' hypothesis as demonstrated by the example of Spain and Italy, it is possible to speak of a 'tourism-led terrorism' hypothesis, as demonstrated by the example of Turkey, the UK and Germany.

These findings show that terrorism causes international tourist arrivals for Spain and Italy, and international tourist arrivals cause terrorism for Turkey, UK, and Germany. Samitas et al. (2018) examined the impact of terrorism on tourism demand in the context of bidirectional relations and long-run persistency in Greece using monthly data from 1977 to 2012.

Study findings concur that terrorism has a

significant negative impact on tourist arrivals to Greece and that causality is noted from terrorism to tourism only.

Demir et al. (2019) investigated the influence of geopolitical risks on inbound tourism. The study covers the period from 1995 to 2016 for 18 countries. The study used country-specific GPR index data of Caldara and Lamoriello. In the empirical model GDP, exchange rate, population, and inflation are added as control variables. GPR and lagged GPR were analyzed separately to test the hypothesis that geopolitical risk influences inbound tourism negatively. The model was analyzed by the dynamic panel data regression analysis method (GMM-generalized method of moments).

The study findings confirm that the geopolitical risk index is negatively related to inbound tourism also for lagged GPR index. Besides, in the literature by using different geopolitical risk indices, the effects of geopolitical risks on various indicator and sample have been investigated for instance tourist arrivals to Turkey (Asgary & Ozdemir, 2020), US net spending on tourism (Hailemariam & Ivanovski, 2021), tourist arrivals and tourism income for 16 countries (C. Lee, Olasehinde-Williams, & Akadiri, 2021), tourism demand in emerging countries (Balli et al., 2019).

Apart from 2020 due to the global health crisis named COVID-19, world tourism has shown continuous and noteworthy growth for 20 years. In the mentioned period, except for the effect of regional and country-specific incidents and crisis, also Turkey has been one of the most growing countries in tourism. This study aims to test the causal connection between global threats, risks, and Turkey's international tourism demand. On the other hand, besides risks on global terrorism, nuclear and war, a risk related to Turkey is also a factor that is expected to cause a wave in demand.

Global geopolitical threats and acts, such as war, terrorism are effective in many directions, e.g. corporate investment (Dissanayake & Wu, 2018), R&D investments of companies (Pan, 2018), stock returns and crude oil returns (Alqahtani et al., 2020) and emerging countries' stocks (Hoque & Zaidi, 2020). Moreover, as one of the risk-sensitive industry, tourism is also affected by not only incidents and acts but also threats.

Asgary and Ozdemir (2020) showed that the global economic risks and the global geopolitical risks are perceived to be more likely to occur and have more impacts compared to the global environmental and technological risks by the tourism-sector experts and academicians. The global or domestic geopolitical risks affected tourism demand minimally for countries that have attractive tourism destinations as shown by Balli et al. (2019).

Demir et al. (2019) found that there is an asymmetric effect of GPRs on tourist arrivals (TAs) in

the short run. In the period from 1990M1 to 2018M12, an increase in GPR Index reduces TAs but there has no significant effect of decreasing in GPR index in the short run. Particularly, risks in the region where Turkey is located after 2010 are increased due to the incidents in the MENA region. It is a matter of curiosity about how the increasing risks affect tourist arrivals to Turkey.

Polat, Alptürk and Gürsoy (2021) examined the effects of global geopolitical risk on the tourism sector index and tourist arrivals in Turkey. According to the empirical findings obtained from the study, it has been reached that global geopolitical risk reduces tourism returns.

Therefore, in our study, it were taken into account the variables of geopolitical risk specific to Turkey, terrorist threats and terrorist acts and used second causality test Toda Yamamoto (1995) differs study of the Polat et al. (2021). From this point of view, tested hypotheses in this study are listed as follows:

$H1_0$: There is no causality between the global geopolitical risk index and international tourist arrivals to Turkey,

$H2_0$: There is no causality between the global geopolitical threats index and international tourist arrivals to Turkey,

$H3_0$: There is no causality between the global geopolitical acts index and international tourist arrivals to Turkey,

$H4_0$: There is no causality between Turkey-specific geopolitical risk index and international tourist arrivals to Turkey.

4 METHODOLOGY and FINDINGS

4.1 The Object of the Study

As aforementioned tourist behaviours are affected by many factors, based on tourist or origin and destination country. Related literature has shown that terrorism has a detrimental effect on tourist arrivals (Karakuş, 2015; Afonso-Rodríguez & Santana-Gallego, 2018). Contrary to this, some studies have shown that tourist may behave irrational (Mawby, 2000; Balli et al., 2019: 8).

Domestic or global risk factors may not be seen enough to suspend travel or not to visit a destination, especially an attractive destination (Balli et al., 2019). Within this context, this study is aimed to investigate the causal connections between risk factors and international tourist arrivals.

This allows us to assess whether Turkey is an attractive destination or not and whether Turkey is perceived as one of the safe destinations, whether the geopolitical threat or act has the casual connections in tourism demand, lastly, whether the global or local risks is more effective.

4.2 Variables, Data and Analysis

To test the hypotheses developed to achieve the research purpose, firstly stationary of the series was checked using the Lee-Strazicich unit root test, which allows structural breaks in the series. Lee-Strazicich unit root test estimates stationary with breakpoint so the test result is free of size distortions and spurious rejections with a break (Lee & Strazicich, 2004).

The optimal lag order for series was determined by Schwarz Information Criterion (SIC). After selecting the optimal lag order, the causality was tested by Toda & Yamamoto, (1995).

Then, to determine the asymmetric causality between variables, Hatemi-J (2012) causality test was used. Hatemi-J (2012, 455) causality test allow for an asymmetric structure in the causality testing because of the asymmetric information phenomenon.

Asymmetric information expresses that information in good or bad news or change in the positive or negative direction of series may cause different causality between series. By testing asymmetric causality between risk and tourism demand will give a chance to see whether foreign visitor demand for Turkey is affected by risk or to make inferences about whether touristic destinations of Turkey are attractive.

Finally, Gauss 10 software was used to perform tests. As it was mentioned before, variables used and models tested in the study are listed in Table 1 as shown below.

Table 1. Variables and Tested Models.

|		
Tourism Demand	NoT	International tourist arrivals to Turkey
Risk Variables	GPR	Overall geopolitical risk index of the world
	GPRT	Overall geopolitical threats
	GPRA	Overall geopolitical acts
	GPRTR	Geopolitical risks calculated for Turkey
Tested Models	Geopolitical Risks <≠> International tourist arrivals to Turkey	
	Geopolitical Risks (+) ≠> International tourist arrivals to Turkey (-) Geopolitical Risks (−) ≠> International tourist arrivals to Turkey (+)	

Source: Prepared by the authors.

The number of tourists (NoT) is the number of international tourist arrivals, measured by arriving foreign visitors to Turkey and obtained from the Association of Turkish Travel Agencies (TÜRSAB, 2021). Global geopolitical risk (GPR) index is calculated with geopolitical, nuclear, war and terrorist threats, war and terror act around the world. GPRTR is the geopolitical risk index calculated for Turkey within the same indicators.

On the other hand, GPRT and GPRA are overall geopolitical threats and geopolitical acts calculated with threat factors and act factors for the world. These risk indices are developed by (Caldara & Iacoviello, 2018) and listed in the economic policy uncertainty webpage.

In this context, risk data were gathered from the Economic Policy Uncertainty (EPU, 2021) webpage. In the study, 264 monthly observations were used covering the period of 1998M1-2019M12 for each variable, and models tested with the logarithmic values. The time plots of the original data series are presented in Figure 1.

Figure 1: The time plots of variables used in study.
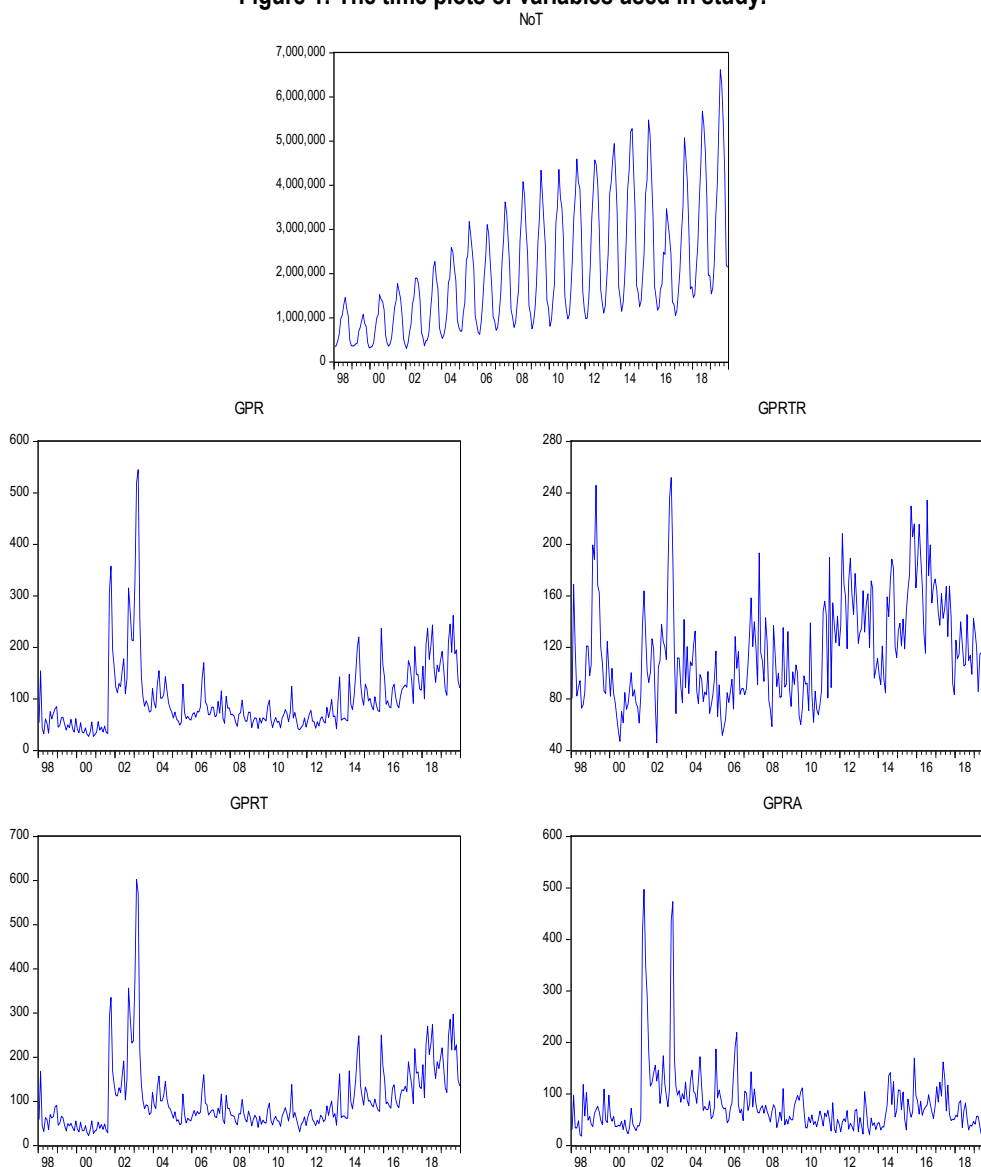
P.S. Monthly data of the *NoT* is the number of tourists, *GPR* is the overall geopolitical risk index, *GPRTR* is the geopolitical risk index for Turkey, *GPRT* is the overall geopolitical threats index, *GPRA* is the overall geopolitical acts index.
Source: Prepared by the authors.

In Fig. 1, NoT data are in a fluctuation with an increasing trend between 1998M1 and 2019M12. Arriving foreign visitor to Turkey shows seasonality effect when examined monthly for each year. On the other hand, Turkish tourism has experienced the worst geopolitical risk acts, the 15 July coup attempt organized by Fethullah Terrorist Organization (FETO), compared to the bad neighborhood effect, regional

terrorist act, and so forth in 2016. Unbalanced risk indices can be seen in Fig. 1 especially for Turkey, which is more volatile.

The global GPR index and GPR Threat index are much more resemble each other. While overall risk indices were at their highest level, due to 9/11 and associated developments and so on incidents, in the early 2000s, they subsequently decreased dramatically.

GPRTR was at its highest levels in 1999, the year for the PKK's founder head terrorist Ocalan was caught (Gündoğan, 2020; Unur, 2000), and 2003, in which the year Iraq War began (Alagöz, 2016). The geopolitical risk index of Turkey shows that risks in bad neighborhood war effects, and PKK and FETO terrorist acts are more effective in their risk level.

The effects of geopolitical risks on tourist arrivals and relations between these variables can be tested using many other econometric and statistical methods. This study is limited to those variables listed in Table 1, and causality within the positive and negative directional changes. From this point of view, the question of "do the risks cause Turkey's tourist arrivals?" is the main subject of this paper.

This causal connection is tested using Toda-Yamamoto (1995) and Hatemi-J (2012) methods. By Toda-Yamamoto we test causality, which is the simplest way without pretest unit root or cointegrated series, prerequisites of Granger causality, to test long-run causality.

Besides, we use Hatemi-J (2012) to determine the asymmetric causality in positive and negative shocks, and the results are reported in the next section.

4.3 Findings

4.3.1 Lee-Strazicich Unit Root Test

Aiming to examine causal connections between geopolitical risks and foreign visitor arrivals for the monthly observations from 1998 to 2019, this study uses secondary data. One of the main steps for time series data analysis is a requirement to check the presence of unit root. Without testing the unit root of the time series, causality results will be spurious.

Econometricians have developed many unit root testing methods to check the stationary of the time series. Some of the unit root tests used in the stationary analysis do not take into account extraordinary incident effects, such as crisis, natural disasters that happened in the period under review (Kaplan, 2015).

Perron (1989), Zivot and Andrews (2002), Ng and Perron (2001), Lee and Strazicich (2003) allow for one or two structural breaks at most in structural break unit root tests while the test recommended by Carrion-i-Sylvestre, Kim and Perron (2009) allows up to five structural breaks (Kaplan, 2015, 95). Series can have a path in a period until unanticipated incidents occur one or more times, thus structural breaks of the series can disrupt the unit root test results.

From this point of view, we used Lee and Strazicich (2003) which proposes a two-break minimum LM test, which endogenously determines the location of two breaks in level and trend and tests the null of a unit root (Lee & Strazicich, 2003). Lee-Strazicich unit root test results for series of variables are given in Table 2.

Table 2. Lee-Strazicich (Model C) unit root test results.

Series	I(0) Stat.	Break Dates	Critical Value	1. Difference Stat.	Break Dates in Difference	Critical Value
NoT	-4.575252**	October 2013	-4.030312	-	-	-
GPR	-5.191153**	June 2003	-3.956126	-	-	-
GPRT	-4.880173**	June 2002	-3.945292	-	-	-
GPRA	-8.884805**	May 2003	-3.952856	-	-	-
GPRTR	-3.820112	June 2016	-3.946747	-9.098035**	June 2016	-3.946160

Source: Prepared by the authors. *(Note: ** denotes significant at 5%.).*

In Table 2 Lee-Strazicich structural break unit root test results show that NoT, GPR, GPT and GPA series are stationary in their level values, while GPRTR shows nonstationary in its first difference. These results point out that GPRTR can be modeled in its first difference series while the others can be modeled at level series for causality tests.

On the other hand, when the identified dates of structural breaks are investigated, October 2013 break-in NoT might stem from Turkish warplanes shoot down by a Syrian helicopter in September 2013 and this event might be the result of a perceived conflict that

would rise between Turkey and Syria by visitors. Iraq war in 2003 affected the overall geopolitical risk indices, while the 15 July coup attempt played a role in GPRTR risk index structural break.

4.3.2 Toda-Yamamoto Causality Test Results

Toda and Yamamoto (1995, 246) proposed a model which is a simpler way to test the economic hypothesis under the restrictions on the parameters of vector autoregressive (VAR) models without pretests for unit roots and cointegrating tests.

This augmented VAR model guarantees the asymptotic distribution of the MWald statistic (Alimi, Ofonyelu, Alimi, & Ofonyelu, 2013; Aziz, Habibullah, Azman-Saini, & Azali, 2020) even when there is cointegration, and Toda-Yamamoto causality has been labelled as the long-run causality tests (Aziz et al., 2020).

Toda-Yamamoto procedure starts with determining lag length k, then, as the second stage, it estimates a $k + d_{max}$th-order VAR where d_{max} is the maximal order of integration in which suspect might occur in the test process.

The coefficient matrices of the last d_{max} lagged vectors in the model are ignored (since these are regarded as zeros), and this allows testing linear or nonlinear restrictions on the first k coefficient matrices using the standard asymptotic theory (Toda and Yamamoto, 1995).

As the last stage of the Toda-Yamamoto causality testing process, the levels VAR is estimated according to the $p=k + d_{max}$th lag (Toda & Yamamoto, 1995, 230; Doğan, 2017).

Thus, the Toda-Yamamoto is a simple example of a bivariate model with k lag, based on the following equations (Frimpong & Oteng-Abayie, 2006; Sakarya & Akkuş, 2018);

$$Y_t=\beta_0+ \sum_{i=1}^{k+d_{max}} \beta_{1i}Y_{t-i}+ \sum_{i=1}^{k+d_{max}} \beta_{2i}X_{t-i}+\varepsilon_t \tag{1}$$

$$X_t=\beta_0+ \sum_{i=1}^{k+d_{max}} \beta_{1i}X_{t-i}+ \sum_{i=1}^{k+d_{max}} \beta_{2i}Y_{t-i}+\varepsilon_t \tag{2}$$

From equation (1), "the variable X does not Granger cause Y" (i.e. GPR ≠> NoT, GPR does not Granger cause NoT) if $H_0 : \beta_{1i}= 0$ against $H_1 : \beta_{1i} \neq 0$, where i≤ k. This same hypothesis is valid for equation 2, which means "the variable Y does not Granger cause X" (i.e. NoT ≠> GPR). The result of the Toda-Yamamoto, hereafter TY, (1995) causality test is presented in Table 3.

Table 3. Toda-Yamamoto Causality (modified Wald) Test Result.

		d_{max}	k	MWald	p-value	Causality and Direction
NoT	**GPR**	0	13	45.44400**	0.0000	GPR => NoT
	GPRT	0	13	30.13858**	0.0045	GPRT => NoT
	GPRA	0	13	21.54245*	0.0629	GPRA => NoT
	GPRTR	1	13	40.19630**	0.0001	GPRTR => NoT
GPRTR	**NoT**	1	13	29.32262**	0.0059	NoT => GPRTR

*** and * denotes significant at 5% and 10%, respectively.*

Source: Prepared by the authors.

From the TY results (Table 3), the null hypothesis that the GPR, GPRT, and GPRTR do not Granger-cause NoT (X≠>Y) was rejected at 5% significance level, while the hypothesis GPRA does not Granger-causes NoT was rejected at 10% significant level.

The overall findings support the literature (Akadiri et al., 2020; Asgary & Ozdemir, 2020; Demir et al., 2019; Hailemariam & Ivanovski, 2021; Karaoğlu, 2019; C.-C. Lee, Olasehinde-Williams, & Akadiri, 2021; Murat et al., 2013; Samitas et al., 2018) indicating that global and country-specific risks affect tourism demand.

While the direction of causality is one-way from global geopolitical risk indices to NoT, GPRTR and NoT causality is bidirectional, revealing that there is causality from Turkey's geopolitical risk to international tourist arrivals, and also from international tourist arrivals to Turkey's geopolitical risk.

The findings of this study obtained by the TY causality test are compatible with the "tourism-led terrorism" hypothesis reached by Nikšić Radić et al. (2018). The findings for global risk indices are also compatible with Buigut et al. (2017) who showed that travel warnings doubled the negative effects of

terrorism risk. Contrary to the findings of Çelik and Karaçuka (2017), who demonstrated that terrorist attacks affected tourism demand on a weak and small scale from OECD countries to Turkey, our findings show that there is strong causality from risks to international tourist arrivals, except geopolitical acts risk index.

4.3.3 Hatemi-J Asymmetric Causality

In the literature developed causality tests are based on the assumption that the effects of variables' cumulative positive and negative shocks are the same (Şahingöz & Tütütncü, 2020) (Tütüncü and Şahingöz, 2020). But economic units react differently to the new information, so different reactions to good news and bad news induce asymmetric causality (Hatemi-J, 2012).

To examine the asymmetric causal effects of good news and bad news, Hatemi-J (2012) suggested the asymmetric causality testing method, which uses the idea of transforming data into cumulative positive and negative changes.

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Hatemi-J asymmetric causality testing method uses the bootstrapping simulation technique to solve the normal distribution and the existence of autoregressive conditional heteroskedasticity (ARCH) effects of data (Hatemi-J, 2012). Generated from the cumulative positive and negative changes data, the asymmetric causality is tested and test results are presented in Table 4.

Table 4. The results of tests for causality.

Null hypothesis	Test Value Wald $\chi 2$	Bootstrap Critical Values at			Hypotheses
		1%	5%	10%	
$GPR^+ \neq> NoT^-$	32.377**	11.872	8.246	6.549	$H1_0$: rejected
$GPR^- \neq> NoT^+$	33.631**	11.817	8.124	6.505	
$GPT^+ \neq> NoT^-$	42.349**	13.844	9.632	7.956	$H2_0$: rejected
$GPT^- \neq> NoT^+$	40.643**	11.685	7.984	6.514	
$GPA^+ \neq> NoT^-$	31.748**	13.622	9.586	7.820	$H3_0$: rejected
$GPA^- \neq> NoT^+$	33.345**	14.127	9.755	8.063	
$GPRTR^+ \neq> NoT^-$	26.592**	13.471	9.610	7.845	$H4_0$: rejected
$GPRTR^- \neq> NoT^+$	20.469**	11.866	8.025	6.385	

The denotation A $\neq>$ B means that variable A does not cause variable B.
** denotes significant at 5%.

Source: Prepared by the authors.

Based on the asymmetric causality test results, the null hypothesis that a positive (negative) shock in risks on global or domestic scale does not Granger-cause the negative (positive) shocks in NoT is rejected at 5% level of significance. This means that there is a causal connection between the global geopolitical risks and Turkey's international tourist arrivals.

This finding is also valid for global threats and acts indices and Turkey-specific geopolitical risks. These findings imply that there is causality from the positive shocks of risks to the negative shock of international tourist arrivals to Turkey, which support Toda-Yamamoto causality results and the literature.

5 DISCUSSION

The study findings demonstrate that there is a causal connection between global geopolitical risks in the positive and negative direction and Turkish tourism demand, the causality applies for all risk indices that overall or a threat or acts.

Besides, the Turkey-specific geopolitical risk index has more strength causality as is expected. Our study supports the findings of Polat et al. (2021), similar results were seen in the same direction, and supports that geopolitical risk negatively affects tourism returns, people do not want to travel to a place that has a security risk.

These results, also supporting the prior researches' (such as Santana-Gallego et al., 2016; Buigut et al., 2017; Trindade, 2017) findings that security risk affects to tourism demand, show that Turkey is one of the countries that geopolitical risks affect its tourism demand. The findings of this study show that tourism demand for Turkey has been affected by global and domestic geopolitical risks although that have attractive destinations as the sixth most visited country within the secure time. This study does not support the findings of Balli et al. (2019) that the global and domestic risks have minimal effect on tourism demand for countries that have attractive destinations.

However not to forget, the Turkish tourism industry performs well within this causality, and international demand to Turkey increases even if there is not enough performance in income. In terms of tourist behavior, terrorism risks do not only cause shifting the demand towards competitors but may even lead to an avoidance attitude towards the destination (Karakuş, 2015). In other words, the routine of mentioning the name of a destination with terrorism risks may cease to be an alternative for tourists in later times. Shifting demand may cause significant losses, especially in developing countries where the share of tourism revenues in their economy is high. In this respect, it is observed that Turkey has periodically experienced the demands of the shift, but then the demand is increasing in normal times.

Tourism companies operating in destinations where terrorism and security risks are experienced have much more operating risks that may result in a loss. This result will cause economical and financial issues (Mawby, 2000) that not only companies but also the countries will experience.

For example, in Turkey, terrorism has resulted in an average gap of about 7 percent without terrorism

between the actual real GDP of Eastern and Southeastern Anatolia (Bilgel and Karahasan, 2017). To deal with the problem that insecurity risks caused, Asongu et al. (2019) suggested some corresponding managerial implications to tourism companies. Accordingly, proactive and preventive measures that limit the exposure of tourists to such homicides, violent demonstrations, and political instability events should be first taken.

After seeing the impact of terror and war risk on demand, the question arises of how to manage this situation. Governments must manage the negative image in the minds of tourists. If the image of any destination is deteriorated due to terrorism and the risk of war, it is possible to correct this image by taking the right steps (Ali, Shah, & Khan, 2018).

Of course, at this point, it is necessary to start by taking measures to ensure the physical safety of tourists. The method of providing physical safety includes such implementation; increased police presence, security guards, identity checks, border patrols, and checkpoints, etc. (Doherty et al., 2008).

However, providing physical security will not be sufficient alone. This effort should be reported to tourists through media channels and they should be convinced that they will be safe in that destination.

Otherwise, the security provided will not improve the image. As Ali et al. (2018) stated, it is necessary to use the power of the media to correct the image, to develop international trade and to support cultural changes. It can be effective to use tools such as films and documentaries to raise awareness that the destination is secure (Séraphin, Zaman, & Fotiadis, 2019).

6 CONCLUSIONS

When the tourists' purchasing decision process is examined, it is seen that they will begin to search for alternatives with the emergence of the need. At this stage, the tourist will search for experiences that will meet his/her existing needs and evaluate alternatives.

The important point is that one of the main determinants of purchasing is how the tourist accesses information. The tourist will try to choose the most appropriate alternative for him/her, based on the information used for the determination of alternatives and their subsequent evaluation.

However, if the experience is an outcome of the tourism and hospitality industry, this decision-making process will become more complex. One of the main reasons for this is that the experience mentioned is very intangible.

Another important reason is that it is not possible to test the experience. Tourism experience is purchased long before it is experienced. Especially with

the effect of early booking promotions, this period is prolonged. At this point, the tourist will perceive more risk towards the tourism experience. He/she will also experience an intense cognitive conflict between purchasing and use due to these uncertainties.

In the tourism and hospitality industry, where the decision to purchase an experience is so complex, information sources in the tourists' purchasing decision process become very important. This study aims to examine the role of a source of information that tourists acquire while choosing destinations. The effect of war and terrorism risks based on the news on the level of travelling has been examined.

In this article, we investigate whether geopolitical risks are one of the determinants for Turkey's international tourism demand. Tourists decide to visit a destination with many pushes and pull factors. When other factors are convenient, tourists visit a destination if it is attractive. What if there is a war risk between two countries in the "global" economic world, or there is a terrorism risk over a country, what do tourists do? We tried to answer this question using Hatemi-J causality analysis between risk indices and foreign visitor arrivals in monthly data from 1998 to 2019.

Those selected years are the period for not only international and Turkish tourism development, but also many geopolitical risks occurring around the world, e.g., 9/11, Iraq War, Arab Spring, Syrian civil war, and Turkey, e.g., PKK's acts, Ocalan's capture, ISIS's acts and threats, FETO's attempt, Russian aircraft crisis as well as 2001 government and financial crises.

The findings of the study, as is shown in previous tables and Table 5, show that there is causality from geopolitical risks to Turkey's foreign visitor arrivals regardless of whether risks are global or Turkey-specific.

Table 5. The Overall Results on the Existence of Asymmetric Casual Connections between Risk Factors and Turkey's International Tourist Arrivals.

Geopolitical	Global Risks	Turkey's International Tourist Arrivals	Yes
	Threats		Yes
	Acts		Yes
	Turkey-Specific Risks		Yes

Source: Prepared by the authors.

Herewith, it can be said that tourism demand to Turkey, in the context of foreign visitors, was affected by global or domestic geopolitical risks. The significant effect of risks supports that people do not want to travel to a place that has a security risk, indicating the bi-directional causality between Turkey's geopolitical risks and tourist arrivals. This may be a sign that Turkey has a tourism-led terrorism problem targeting Turkey's tourism and economy.

Tourism is one of the push factors to set and sustain peace between societies and plays a significant role in setting peace and stopping violence between countries. However, the risk of war, and worse, war can destroy the things gained by tourism.

For further studies we suggest investigating why tourists visit Turkey in a risky term and in which risky situation foreign visitors feel Turkey is risky. Besides, it can also be suggested investigating the effects of global or domestic geopolitical risks on Turkish tourism markets in the context of tourism demand.

At the same time, it could be a remarkable research to consider a similar issue for Latin American destinations. While examining the tourism demand and risk perception, it is necessary to pay attention to an issue mentioned by Korstanje (2020). Tourism activities themselves (if not managed properly and morally) can cause this risk perception to increase. For this reason, this issue appears as a subject worth examining in future studies.

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