

The impact of economic and political crises on the survival of tourism-related firms: Evidence from Antalya

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Abstract

This article examines the effects of economic and political crises on the survival of 7115 tourism-related firms (hotels, restaurants, travel agencies and spas) in the Antalya region between 2000 and 2016. Using a discrete-time hazards model, we show that tourism-related firms exhibit lower survival rates during times of crisis. We have also found that age, size and legal form increase survival rates. In addition, firms in tourism locations specialized subregions and subregions with higher entry rates have lower chances of survival, whereas firms in tourism destinations with large markets have higher chances to survive. Our empirical analysis suggests that hotels and travel agencies are more sensitive to macroeconomic and political shocks than other tourism-related businesses like restaurants and spas.

Keywords

Antalya, economic and political crises, survival analysis, tourism-dependent cities, tourism industry

Introduction

As the world's fastest-growing industry, tourism has a relatively strong sectoral resilience. Antalya, an international mass tourism city in Turkey, was harmed by the global economic crisis but, as in many other regions in Turkey, the recession's impact was relatively mild and its recovery was quite quick and strong (Eraydın, 2015). However, Antalya was also affected after Turkish

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forces shot down a Russian fighter plane in November 2015, a series of terrorist attacks in other parts of the country in 2015 and 2016 and the failed coup attempt in 2016 (Terhorst and Erkuş-Ozturk, 2019). Tourism-related firms in the region, such as hotels, restaurants, travel agencies and spas, have thus been hit by both the latest global economic crisis and recent political crisis in Turkey. This makes Antalya an interesting case to explore the survival of tourism firms following economic and political crises, and learn more about possible policies to stimulate their survival strategies, and suggest possible proposals to cope with crises.

Few studies have empirically examined how economic and political crises affect the survival of firms (Bruni et al., 2014; Ferreira and Saridakis, 2017; Kovac et al., 2015; Varum and Rocha, 2012; Varum et al., 2014), and these studies have focused primarily on firms operating across all sectors of the economy. The impact of economic and political crises on tourism firm survival in tourism cities is not well-documented or understood. Except very few studies such as Falk (2013), Lado-Sestayo et al. (2016) and Gemar et al. (2016), current studies have not investigated the effects of both economic and political crises on the survival of firms in the tourism sector itself.

While the literature on firm survival has been mainly dominated by organizational studies, few have focused on the tourism industry (Brouder and Eriksson, 2013; Falk, 2013; Kaniovski and Peneder, 2008; Lado-Sestayo et al., 2016) and no discussion has focused on the survival of tourism-related firms, such as hotels, travel agencies, restaurants and spas. Neither have they investigated context-specific resilience factors, which are seen as important determinants of regional development in the evolutionary economic geography literature.

Reactions to shocks and the speed and recovery also depend on geographical characteristics as resilience discussions shows (Fingleton et al., 2012; Boix et al., 2017; Capello et al., 2015; Giannakis and Bruggeman, 2017). The tourism literature is weak in terms of evaluating the resilience of tourism regions from the perspective of related industries, which is widely discussed in the evolutionary economic geography literature. Only Brouder and Eriksson (2013) paid attention to the resilience of tourism-related businesses or firm survival in tourism regions. However, there is a lack of empirical evidence regarding geography-, context- and industry-specific variables examining both the entry and exit number of firms in the tourism industry hit by economic and political crisis.

In this context, the aim of this article is to explore the factors that influence the survival of tourism-related firms such as hotels, restaurants, travel agencies and spas in the Antalya region, which are strongly linked, with a special focus on context variables, such as downturn periods and the geographical attributes of entrepreneurs, besides other firm-specific factors. Using a unique annual firm-level data set (7115 firms, including 1397 hotels, 2972 restaurants, 1773 travel agencies and 973 spas) from different geographical locations in Antalya for 2000–2016, obtained from Trade and Industry Organization of Antalya (ATSO), we empirically investigate the factors that influence firm survival during and after periods of economic and political crises. Using information about registration and deregistration dates as well as other relevant data, we apply discrete-time survival analysis to investigate the determinants of survival. The empirical analysis begins with the application of the Kaplan–Meier method to give some stylized facts on the duration of tourism-related firms across subsectors. Later on, the effects of firm-specific, context-specific variables on the survival of tourism-related firms in the Antalya region are determined with discrete-time survival analysis.

This article is structured as follows. The firm survival literature will be discussed briefly in the second section. In the third section, the research design will be given by defining the hypotheses

and describing the data set. Empirical results will be discussed in the fourth section. Further remarks and policy recommendations are given in the conclusion.

Brief literature review

To date, many factors have been investigated in research on firm survival, including entry and exit processes. This literature is dominated by organizational studies (Cala et al., 2015; Lay, 2003; Ozturk and Kilic, 2012) and the role of firm size, firm age, performance, ownership and human capital (Agarwal, 1996; Audretsch, 1995; Boeri and Bellman, 1995; Disney et al., 2003; Ericson and Pakes, 1995; Littunen, 2000; Varum and Rocha, 2012) are elaborated as variables affecting firm survival.

However, the literature above is weak in terms of explaining the reactions of different industries (such as the tourism sector in our case) to crises, the role of different crises and geography. Firstly, the empirical literature on firm survival mainly focuses on manufacturing and very few focuses on the services sector, and even fewer on the tourism industry. Despite the important role of the tourism sector in global environment, few articles have dealt specifically with firm survival in the tourism industry (Falk, 2013; Gu and Gao, 2000; Kim and Gu, 2010). In the hospitality literature, survival analysis has been used to assess the length of a visitor's hotel stay (Barros et al., 2008, 2010; Gokovali et al., 2007). Some recent empirical studies have focused on the variables discussed in economic geography on firm survival, such as effects of related businesses and place-based indicators on the survival of tourism companies (Brouder and Eriksson, 2013; Gemar et al., 2016). There are wide variations among tourism subsectors while little attention has been paid to all segments of the tourism industry, ranging across hotels, restaurants, travel agencies and spas, especially in the developing world. In addition, existing studies are limited to contribute on the effects of crises on firm performance. Since the impacts of economical and political crises on firm survival in tourism-related industries have not been investigated, this article aims to contribute these weak points.

The second weakness in the literature on the effects of economic and political crises on firm survival is that it is fragmented. While some studies focus on the demand side, others focus on the supply side. In demand-side studies, crises are taken as exogenous elements. The influence of type of crisis (symmetrical or asymmetrical) on tourism destinations (competitiveness) is studied in general (Perles-Ribes et al., 2016). In supply-side studies, the response of a part of the industry (hotels, airlines, etc.) to crises is studied (Alonso and Bremser, 2013). Very few studies have empirically examined how prevailing economic crisis affect the survival of firms (Bruni et al., 2014; Ferreira and Saridakis, 2017; Kovac et al., 2015; Varum and Rocha, 2012; Varum et al., 2014). Only Irvine and Anderson (2004) have studied the role of economic crisis in tourism firm survival with a focus on small tourism firms in rural areas. Furthermore, there have been few studies on the effects of political crisis on tourism (Drakos and Kutun, 2003; Ivanov et al., 2017). They generally indicated a negative effect of political turmoil on tourism. However, no study has been made to analyse the effects of political crisis on the survival of tourism-related firms.

Thirdly, only recent studies have paid attention to the role of geography in firm survival (Basile et al., 2017; Folta et al., 2006; Shaver and Flyer, 2000). The economic geography literature discusses both the role of regional specialization and diversification in relation to the regional resilience to crises. Given declining demand, a regional economy with highly diversified sectors is less to suffer lower growth and employment. According to Brouder and Eriksson

(2013), regional specialization may improve tourism firm survival due to network externalities. However, various studies have found evidence for negative effects on firm survival. This is expected since a high concentration of firms in one industry leads to fierce competition between them (Porter, 1998).

Agglomeration economies and its role for firm survival have also been widely recognized in the economic geography literature. Localization, diversification and urbanization externalities are different types of agglomeration externalities that have different influences on firm success. Spatially clustered tourism firms that belong to the same industry, such as hotels or restaurants, can benefit from external economies of scale because of the availability of a specialized labour market, a concentration of specialized suppliers, public goods specific for firms within a particular industry and knowledge spill-overs (Erkuş-Öztürk and Terhorst, 2018). Localized external economies often compensate for scale disadvantages, thereby creating stronger competition, which is expected to reduce firm survival. External economies of scope are called urbanization economies, that is, firms of different industries benefit from clustering because of the specific demand in a place (low-budget hotels and standardized restaurants, for instance, mutually benefit from being co-located in a tourism place), a labour force that can be employed in different industries, public goods beneficial to all industries and inter-industry spill-overs (Jacobs, 1967), so long as the cognitive distance between industries is low (Frenken and Boschma, 2007). External economies of scope increase the chances of interaction and recombination between industries, which lowers exit rates and protects firms from crisis (Basile et al., 2017). It is clear that, in the case of urbanization economies (external economies of scope), a mix of firms that belong to different (tourism and non-tourism industries) mutually benefit each other. However, some tourism firms do not want and/or cannot be dependent on external economies of scope (urbanization economies). Large hotels offering a large variety of services do not want to be dependent on external economies because they aim to make extra profits by internalizing externalities and/or are forced to diversify because they are located in a very homogeneous tourism area isolated from the city. This localization externality is clearly seen in the tourism enclave of Belek (Antalya), which is dominated by big hotels.

While increased access to network externalities due to location within a tourism cluster or a tourist destination can increase the survival of tourism firms, territorial context and institutional set-up for tourism development may also affect tourism firm survival. However, these have not yet been analysed. State support and state-business relations are important territorial strategies in the development of tourism places. In Antalya tourism region, while some tourism places have been created with long-term state support through subsidies to hotels, such as the Kemer and Belek tourism zones, other tourism places have developed spontaneously due to their natural and historical assets, such as Antalya city centre and Alanya. The territorial and political context also affects sensitivity to a crises and the severity of its impact. These contexts may vary even within the same sector or the same tourism destination (Erkus-Ozturk and Terhorst, 2012). However, evaluating them separately as a tourism location can indicate how tourism place development contributes to the survival of companies irrespective of agglomeration externalities.

Research design

We present a number of hypotheses mainly drawn from previous firm survival studies. We then provide research design in Antalya, the data and the methodology applied for the survival analysis.

Hypotheses

While we are particularly interested in analysing the effects of economic and political crises on firm survival, we also elaborate several firm-specific and context-specific factors, which have been widely used in previous analyses of firm survival (Brouder and Eriksson, 2013; Falk, 2013; Gemar et al., 2016; Kaniovski and Peneder, 2008; Lado-Sestayo et al., 2016; Resende et al., 2016). The firm-specific variables are age, size, legal form and foreign ownership. We also incorporate a number of context-specific variables, such as tourism location, entry rate, market size of subregion, regional specialization, diversification and type of business, and macro-level variables (economic and downturn dummies). The definitions and sources of the explanatory variables included in the estimations and summary statistics are provided in Tables 1 and 2, respectively. The correlation matrix for firm exit and explanatory variables is presented in Online Appendix Table A1.

The literature shows that firm age and size are taken as crucial variable on explaining firm survival (Gemar et al., 2016). According to Kaniovski and Peneder (2008), the survival probability of firm increases with age and size. Falk (2013) showed that firm size is positively and significantly associated with firm survival. Firm size is also very important indicator to show the productivity which influences firm survival. An analysis of Austria's 35 regions, showed that firm size improved the productivity of hotels and restaurants (Smeral, 2007). Firm-level learning is important in explaining lower firm exits in aged firms (Falk, 2013). According to Klepper (1996, 2000), earlier entrant's survival is high due to making higher profits in the initial stages of the industry's life cycle. Based on these findings, we expect a positive association between tourism-related firm survival and age and size. Firm age is calculated as the number of years from the date of establishment. The firm size variable is a dummy variable that takes a value of one for firms that are classified as medium or large according to the values of capital-in paid and zero otherwise. Following Cefis and Marsili (2005), we also include the squared term of age (Age^2) based on recent evidence of a U-shaped relationship between survival rate and age. This allows us to account for any non-linear effects of firm age on the probability of firm survival.

Hypothesis 1. The probability of tourism-related firm survival is positively associated with firm age and size.

Apart from firm age and size, the legal form of firms may also be an important determinant of their survival. Corporations are a particularly strong legal form for sustained survival due to its association with greater size (Gemar et al., 2016). We capture legal form of a business through the dummy variable legal form, which takes the value of one if the firm is organized as a corporation and zero otherwise, that is, if the firm is organized as a sole proprietorship, unlimited or limited liability company, cooperative or some other legal form. We can expect a positive relation between corporation legal structure and firm survival.

Hypothesis 2. Corporations in tourism-related industries have better survival rates than their counterparts.

We also control for foreign ownership by using a dummy variable, foreign ownership, equal to one if the firm is a foreign company and zero otherwise. Theories and existing empirical literature provide conflicting conclusions concerning the influence of this factor on firm survival. On the one hand, some scholars argue that foreign-owned firms have a higher survival probability than their domestic counterparts due to their increased access to resources like capital, brands, know-how and

Table 1. Definition of variables.

Firm exit	Takes value one when the firm exits the market, and zero otherwise
Firm-specific	
Age	Number of years since firm entry (in logs)
Age ²	Squared number of years since the firm entry (in logs)
Size	Takes value one if the firm is medium or large, and zero otherwise
Legal form	Takes value one if the firm is organized as a corporation and, zero otherwise
Foreign	Takes value one if the firm is owned by a foreign entity, and zero otherwise
Context-specific	
Tourism location	Takes value one if the firm is located in one of the following three districts (Antalya city, Serik and Kemer), and zero otherwise
Entry rate	Proportion of new firms in a given year relative to the total stock of the previous year, constructed for each business type at the district level (in logs)
Regional specialization (LQ)	Number of active tourism-related firms of a district divided by the number of all active firms at the district level. The number of active tourism-related firms of the city divided by the number of all active firms at the city level (in logs)
Market size	Number of active tourism-related firms at the district level (in logs)
Market size ²	Squared value of number of active tourism-related firms at the district level (in logs)
Herfindahl index	Reciprocal of number of tourism-related firms, constructed for each business type at the district level (in logs)
Hotels and similar accommodation	Takes value one if the firm is classified in the hotels and similar accommodation sectors category, and zero otherwise
Restaurants, food, beverage and recreational services	Takes value one if the firm is classified in the restaurants, food, beverage and recreational sectors category, and zero otherwise
Travel agency, tour operator activities and other reservation services	Takes value one if the firm is classified in the travel agency, tour operator activities and other reservation services category, and zero otherwise
Spa centres, other sports and recreational sporting services	Takes value one if the firm is classified in the spa centres, other sports and recreational sporting services categories, and zero otherwise
Macro-specific	
Economic downturn	Takes value one if the year is 2008 and 2009, and zero otherwise
Political downturn	Takes value one if the year is 2015 and 2016, and zero otherwise

Note: LQ: location quotient.

technological spillover (Wagner and Gelübcke, 2012). In addition, the sunk cost of investing in foreign markets prevents firms from exiting the market during temporary shocks (Godart et al., 2012). On the other hand, some argue that foreign firms tend to be less rooted (i.e. more footloose)

Table 2. Descriptive statistics for surviving and non-surviving firms.

	Total (<i>n</i> = 7115)				Surviving (<i>n</i> = 4377)				Non-surviving (<i>n</i> = 2738)			
	Minimum	Maximum	Mean	Standard deviation	Minimum	Maximum	Mean	Standard deviation	Minimum	Maximum	Mean	Standard deviation
Firm-specific												
Age	0.000	2.773	1.312	0.781	0.000	2.773	1.322	0.790	0.000	2.773	1.294	0.765
Size	0.000	1.000	0.174	0.379	0.000	1.000	0.221	0.415	0.000	1.000	0.092	0.289
Legal form	0.000	1.000	0.120	0.325	0.000	1.000	0.147	0.354	0.000	1.000	0.074	0.263
Foreign	0.000	1.000	0.124	0.329	0.000	1.000	0.127	0.333	0.000	1.000	0.117	0.321
Context-specific												
Tourism location	0.000	1.000	0.985	0.120	0.000	1.000	0.981	0.135	0.000	1.000	0.992	0.088
Entry rate	-2.560	0.274	-1.907	0.420	-2.560	0.274	-1.990	0.375	-2.560	0.274	-1.765	0.453
Region specialization	-2.024	1.138	0.057	0.347	-2.024	1.138	0.085	0.375	-2.024	0.929	0.007	0.285
LQ												
Destination size	0.000	8.188	7.397	1.096	0.000	8.188	7.385	1.166	0.000	8.188	7.419	0.964
Herfindahl index	0.001	1.000	0.009	0.056	0.001	1.000	0.011	0.064	0.001	1.000	0.007	0.041
Hotels	0.000	1.000	0.209	0.406	0.000	1.000	0.230	0.421	0.000	1.000	0.172	0.377
Restaurants	0.000	1.000	0.368	0.482	0.000	1.000	0.366	0.482	0.000	1.000	0.372	0.483
Travel agencies	0.000	1.000	0.274	0.446	0.000	1.000	0.249	0.433	0.000	1.000	0.317	0.465
Spas	0.000	1.000	0.149	0.356	0.000	1.000	0.154	0.361	0.000	1.000	0.139	0.346
Macro-specific												
Economic downturn	0.000	1.000	0.130	0.336	0.000	1.000	0.101	0.301	0.000	1.000	0.180	0.384
Political downturn	0.000	1.000	0.211	0.408	0.000	1.000	0.306	0.461	0.000	1.000	0.046	0.210

Source: ATSO database and own calculations.

Note: LQ: location quotient.

in the local economy; hence they may close down production more quickly when the local economy shrinks (Varum et al., 2014). So, the proposed hypothesis is below.

Hypothesis 3. Foreign ownership may enhance the survival probability of tourism-related firms.

Besides firm-specific variables, we also include several context-specific variables to capture more fully the effects of location-related factors on firm survival. The first variable, tourism location, is included to evaluate the role of being located in a tourism location on firm survival. Gemar et al. (2016) argue that hotels operating in a tourist destination have higher survival rates due to better price strategies and higher customer satisfaction and loyalty. Although this factor may include both market size effect and specialization effects (and urbanization effects), it is also known that location itself matters in firm survival. We therefore test whether location matters in tourism firm survival irrespective of specialization, urbanization and market size effects, which are tested separately later (see Hypotheses 6 and 7). Tourism location is a crude binary variable that combines all the above discussed variables, namely market size, specialization, urbanization and localization, and takes the value one if the firm is located in one of the three main tourism locations in Antalya (Antalya city centre, Serik and Kemer). The tourism location variable is taken as a spatial variable that shows tourism growth in these settlements, irrespective of their level of specialization, urbanization, market size and emergence through state spatial policies (such as Kemer and Belek tourism centres) or ‘spontaneous’ growth as in the case of Antalya city centre. While Kemer and Belek are specialized tourism centres established by the state, Antalya centre has a more diversified economic structure and more urbanization economies. The differences between these tourism locations regarding specialization, urbanization and market size may have different effects on firm survival (as examined in other hypotheses). However, if they are all categorized under one tourism location variable (which combines the above-mentioned variables), the influence of tourist location on firm survival can be tested separately. Antalya centre, Belek and Kemer are taken as tourism locations (having a significant amount of night-time spending and a varying number of starred hotels (see the reports and statistics of Antalya Provincial Directorate of Culture and Tourism). Other districts that attract tourists to a lesser extent or not at all get zero. For the tourist location variable, we expect that the positive externalities of being located in a tourism location cause high firm survival. Thus, we predict a negative relationship between the variable tourism location and probability of firm failure

Hypothesis 4. A tourism-related firm has a higher survival rate if it is located in a tourist location

Another context-specific variable is firm entry rate in a given district which shows the intensity of competition. A high entry rate replicates a stronger competition, which may reduce the likelihood of firm survival (Mata and Portugal, 2002; Resende et al., 2016; Taymaz and Özler, 2007). The entry rate is computed as the number of new firms in a given district per year divided by the total number of firms operating in that district in the previous year. Accordingly, we expect a negative relationship between firm survival and entry rate.

Hypothesis 5. The probability of survival is lower for tourism-related firms located in a district with a higher entry rate.

Regional specialization is another location feature that may affect firm survival that merits more attention from researchers. Economic geographers have been discussing whether specialized or

diversified regions matter in the long term growth (Beaudry and Schiffauerova, 2009; Kemeny and Storper, 2015). Specialized regions gain from localization economies but are more fragile to crisis than diversified regions that take the advantage of urbanization economies. Defining urbanized tourism regions whether they are specialized or diversified regions is not easy because of both benefiting from localization or urbanization economies (Erkuş-Öztürk and Terhorst, 2018). Porter (1998) argues that tourism depends on both the appeal and quality of the attraction (e.g. beaches and ancient sites) and the quality of tourism-service providers, such as hotels, restaurants, souvenir shops, airport facilities and transportation. This creates mutual dependence among members of the clusters. In addition, the co-location of firms within a tourism cluster may improve the performance of cluster firms due to network externalities, and thereby promoting firm longevity (Brouder and Eriksson, 2013). On the other hand, regional specialization may impair firm survival due to fierce competition between firms within a cluster (Porter, 1998). Hence, regional specialization could decrease or increase the duration of individual firms.

Hypothesis 6. Regional specialization matters in firm survival.

We used the location quotient (LQ) index to measure regional specialization. This indicator is computed as the percentage of tourism-related firms in a certain district divided by the percentage of tourism-related firms at the city level. The LQ index thus indicates whether the share of tourism-related firms in a certain district differs from the average share across all districts. An LQ greater than one indicates a strong concentration of tourism-related firms in the district, whereas a value less than one indicates that the district has a lower concentration of tourism-related firms than the city (Erkuş-Öztürk, 2009).

Market size is also included to account for the effect of agglomeration economies on firm survival. As Ritchie and Crouch (2005) suggest, tourism destinations with high agglomeration economies tend to have higher survival rates than locations with low agglomeration economies since a larger market size increases product differentiation, innovation and productivity. Additionally, Smeral (1998) argues that a high prevalence of clustering in the tourism is an important condition for both successful competition and cooperation within the same destination, which in turn improves firm survival. The empirical literature investigating the impact of agglomeration economies on tourism-related firms survival is very rich (Brouder and Eriksson, 2013; Kaniovski et al., 2008; Lado-Sestayo, 2016). Most of these studies, with the exception of Brouder and Eriksson (2013), conclude that tourism-related firms operating in more agglomerated locations have higher survival rates. Typical measures of agglomeration economies include the number of firms in the industry, the share of that industry's employment of total manufacturing employment and population density. Following Resende et al. (2016), we also use the logarithm of the number of tourism-related firms in a district to proxy for agglomeration economies in our regressions. The quadratic term for market size is also covered to check for a non-linear influence on firm survival.

Hypothesis 7. The large market size matters in the survival rates of tourism-related firms.

The degree of industry concentration (i.e. lack of diversity) is also a key factor for firm survival. We measure this by the Herfindahl index, computed as the reciprocal number of tourism-related firms constructed at the district level. A lower value is associated with a larger number of firms in a specific location, and thus with higher competition. Varum et al. (2014) claim that strong competition may impair the survival of incumbents. However, it may also improve survival rates, since large incumbent firms have enough power to prevent new firms from entering an industry. Cala

et al. (2015) also point out that the Hirschman–Herfindahl index, which indicates a lack of diversification in the region, can be used as an indicator to evaluate the weaknesses of regions to external shocks. Previous empirical studies have reported mixed results for the impact of industry concentration. For example, both Kaniovski et al. (2008) and Lado-Sestayo et al. (2016) show a positive and significant association between industry concentration and firm survival in the accommodation sector. In contrast, Kaniovski and Peneder (2008) and Resende et al. (2016) report that increasing market concentration damages firm survival. Hence, both positive and negative signs of the industry concentration variable let us to define the hypothesis as below.

Hypothesis 8. The diversification of firms in a tourism destination matters in firm survival.

The main focus of this study is to analyse the impact of economic and political crises on the survival of tourism-related firms in the Antalya region. Macroeconomic conditions will also affect firm survival prospects (Varum et al., 2014). Favourable economic conditions are expected to result in higher demand and price-cost margins, which could improve the survival of firms, as incumbents do not have to act so aggressively against new entrants (Basile et al., 2017). However, economic downturns may reduce firm survival, resulting in a negative relationship. Many studies (e.g. Kaniovski et al., 2008) have demonstrated the positive effects of industry or market growth on the survival of firms in the tourism sector. In addition, several recent studies have shown that economic downturns reduce firm survival in the tourism sector (Falk, 2013; Gemar et al., 2016). In the same manner, political crisis are expected to have detrimental effects on the tourism industry (Ivanov et al., 2017).

Hypothesis 9. Firm survival decreases during economic and political crises.

To properly take into account the effects of economic and political crises on tourism-related firms' survival, we employ two dummy variables. The first, economic downturn, captures the impact of the financial crisis on survival probability. The second dummy variable, political downturn, captures the effects of political crisis on firm survival chances. This procedure allows us to evaluate the differentiated effects of economic and political downturns on firm survival. The effect is expected to be stronger during political crises. The general argument is that security and safety are rated the most important factors for tourists when choosing an international travel destination (Mansfeld and Pizam, 2006). Political unrest may cause massive booking cancellations and reductions in new bookings. Such incidents can create a significant burden for tourism-related firms, particularly resort hotels, making them even more fragile to political instability than economic crisis, and hence lead to greater risk of failure. We define an economic downturn as a year in which gross domestic product (GDP) declines by a significant amount, compared to the previous year. Turkey's GDP declined by almost 5% between 2008 and 2009 following the 2008–2009 global financial crisis. The economic downturn variable therefore takes the value of one for 2008 and 2009 and zero otherwise. The political downturn dummy takes the value of one if Turkey suffered from any abnormal political events, such as war, coups or terrorism, and zero otherwise. Turkey's economy, particularly the tourism industry, experienced major losses following repeated terror attacks in 2015 and 2016 and a coup attempt in 2016. Hence, we identify 2015 and 2016 as political downturn periods in the Turkish economy.

Table 3. Summary statistics of firm lifespans (in years) in Antalya region, 2000–2016.

	Number of firms	Observed lifespan in years	
		Mean	Median
Hotels	1397	9.58	10
Restaurants	2972	8.34	9
Travel agencies	1773	9.42	10
Spas	973	9.26	9
Tourism-related firms	7115	9.03	9
Full sample	60,824	8.84	9

Source: Authors' own calculations based on ATSO's database.

Data and descriptive analysis

To assess the effects of economic and political crises on firm survival in Antalya, we use firm-level data garnered from Antalya Chamber of Commerce and Industry database. The data relate to all companies located in Antalya's 15 different districts, including over 62,000 firms for 2000–2016. The database contains extensive information on a wide range of factors, including location (district-level), firm entry, firm exit, date of liquidation, current status, legal form, value of paid-in capital, occupation and ownership status (Turkish or foreign).

Dates of registration and deregistration are used to identify firm status, which provides important information regarding the timing of exit. In the database, firms are grouped into five categories based on their current status: (i) active (22,437 firms), (ii) suspended (12,314 firms), (iii) delisted (27,744 firms), (iv) liquidated (408 firms) and (v) annulled (4 firms). A firm that is registered as active or suspended but not deregistered from the database is considered to be active. Similarly, if a firm in the database is listed as delisted, liquidated or annulled, it is considered as 'exited'. After deleting cases with missing data for firm characteristics and observations that do not meet our definition of firm survival, there was a sample of 48,628 firms. The database also classifies firms according to their activity (occupation). Our analysis considers only tourism-related firms. From the 48,628 firms, 1397 hotels, 2972 restaurants, 1773 travel agencies and 973 spas were selected as tourism-related (see Table 3).

Table 3 presents the mean and median lifespans of firms for each type of activity in 2000–2016. Firm duration (i.e. lifespan) is measured by the number of years the firm is active. The mean lifespan of tourism-related firms (9.03 years) is slightly higher than that of all firms in the total sample (8.84 years). Within the tourism-related sector, hotels had the highest mean lifespan (9.58 years) while spas had the lowest (8.34 years). These differences in survival rates reflect many factors, one of which is varying investment requirements across industries. On average, fixed investment for hotels tends to be larger than that of small- or medium-sized tourism enterprises. These high sunk costs may make it hard for hotels to exit the market during a crisis, thereby increasing their survival probability.

We also show the patterns and differences for various business types in the Antalya region by employing graph survival curves. The survival curves in Figure 1 show that survival rates vary according to business type. In particular, hotels are more likely to survive than other tourism-related business like restaurants, travel agencies and spas. This confirms that survival probability is

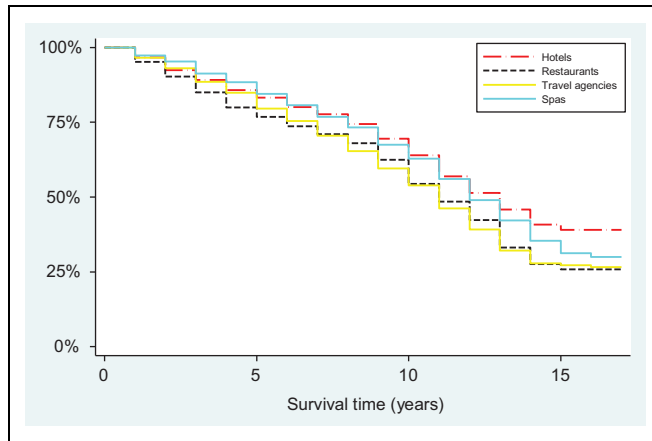


Figure 1. Survival functions for different types of tourism-related firms.

much higher in sectors with high sunk costs than those with low sunk costs. It also suggests that small- or medium-sized firms are more sensitive to economic cycles and political turmoil.

Empirical methodology

We use a survival analysis methodology to investigate the effect of economic and political crisis on firm survival in the Antalya region during 2000–2016. The Cox proportional hazard model (Cox, 1972) is a widely used method to investigate the factors influencing firm survival, especially in tourism firms (e.g. Brouder and Eriksson, 2013; Falk, 2013; Gemar et al., 2016; Lado-Sestayo et al., 2016). The model estimates the effects of several explanatory variables (covariates) on the rate of a particular event happening (e.g. firm exit). This rate is usually known as the hazard rate. This model is a common choice for modelling durations because it does not suppose any specific distribution or shape for the underlying hazard function, but rather assumes that the underlying hazard rate is a function of the covariates and constant over time. This is referred to as the proportional hazards assumption (Türkcan and Saygili, 2019).

The Cox proportional hazard model has been criticized recently by the following reasons (Basile et al., 2017; Fernandes and Paunov, 2015). First, the model has a continuous time specification whereas firm data are collected at discrete-time intervals (e.g. yearly). This makes ties, that is, firms with exactly the same duration, unavoidable. The existence of many tied duration times leads to biased coefficients and standard errors (Hess and Persson, 2012). Second, unobserved heterogeneity (or frailty) between firms is not taken into account in the Cox model. However, individual heterogeneity should be considered to obtain unbiased parameter estimates. When working with large firm data sets, the Cox model has some limitations to account for unobserved heterogeneity, which requires the incorporation of random effects. Finally, the Cox model often violates the assumptions of proportional hazards in firm duration data. When this assumption is violated, the Cox model should not be used since it may lead to biased estimates.

Because our data were collected annually, this study employs a discrete-time hazard model, following Fernandes and Paunov (2015), Basile et al. (2017) and Esteve-Perez et al. (2018). We aim to examine the impact of economic and political crises on firm hazard rates, meaning the

probability that a firm will exist for a given period, conditional on survival up to that period. Using the same notations as Esteve-Perez et al. (2018), we define T_i as a continuous, non-negative random variable measuring the survival time of a particular firm. The hazard probability is then defined as the probability of firm survival i within the specified time interval $[t - 1, t]$, given that failure has not occurred prior to the starting time of the interval. This conditional probability can be expressed as a discrete-time hazard rate:

$$H_i(t, X) = \Pr(t - 1 < T_i \leq t) = 1 - \exp[-\exp(\beta' X_{it} + \gamma_t)] \quad (1)$$

where X_{it} is a vector of the time-varying covariates of the firm, industry and macro-specific covariates that are assumed to affect the hazard rate; β is a vector of the coefficients to be estimated; and γ_t is the baseline hazard rate for the t th interval that allows the hazard rate to vary across periods. A positive (negative) sign of the coefficients means a higher (lower) likelihood of firm exit, and consequently a lower (higher) probability of firm survival.

The discrete-time proportional hazards model can be estimated by maximizing the following log-likelihood function:

$$\ln L = \sum_{i=1}^i \sum_{t=1}^{t_i} [y_{it} \ln(h_{it}) + (1 - y_{it}) \ln(1 - h_{it})] \quad (2)$$

where t_i refers to the terminal time period and subscript i indicates that it varies with the firm's survival spell. The binary-dependent variable y_{it} takes the value of one if the firm survival spell i ceases in year t and zero otherwise. Hence, with this specification, discrete-time hazard models can be regarded as a sequence of binary-dependent variable models. This is convenient since any standard model for binary-dependent variables (such as logit, probit or complementary log-log) can be applied to estimate discrete-time hazard models.

To estimate the parameters of equation (2), it is necessary to determine the functional form of the hazard rate, $h_i(t, X)$. As discussed in Jenkins (2005), complementary log-log (cloglog), logit and probit models are the most common functional specifications for the estimations of models with binary-dependent variables. The cloglog model is the discrete-time counterpart of the continuous-time Cox proportional hazards model. In contrast, both logit and probit models provide a non-proportional hazard assumption. We estimated equation (2) by using discrete-time cloglog, logit and probit models. For the cloglog model, the discrete-time hazard function takes the following form:

$$\text{cloglog}[1 - h_t(X_{it})] \equiv \log(-\log[1 - h_t(X_{it})]) = \beta' X_{it} + \gamma_t \quad (3)$$

However, the cloglog model described by equation (3) fails to account for potential unobserved heterogeneity among firms because its baseline hazard is assumed to be constant and identical across firms over any duration. Ignoring unobserved heterogeneity may introduce a severe bias into the nature of the duration dependence and estimates of the covariate effects. The most common way of dealing with unobserved heterogeneity is to include random effects in the hazard function. In the cloglog model in equation (3), unobserved heterogeneity, ν_i , is introduced as follows:

$$\text{cloglog}[1 - h_t(X_{it}|\nu_i)] \equiv \log(-\log[1 - h_t(X_{it}|\nu_i)]) = \beta' X_{it} + \gamma_t + u_i \quad (4)$$

where ν_i is the firm-level random effects included through the error term $u_i = \ln(\nu_i)$, the error term is assumed to be normally distributed with a mean of zero and variance σ^2 .

To estimate the effects of economic and political crises on firm survival, we first proceed with the discrete-time cloglog, logit and probit models without frailty (unobserved heterogeneity). As a robustness check, we then consider the discrete-time cloglog, logit and probit models with frailty, which incorporates firm-level random effects to account for firm-specific variations. In each regression analysis, hazard ratios are in log form; thus, a negative coefficient indicates a higher survival rate or lower hazard rate.

These specifications of the discrete-time hazards model require the underlying firm database to be expanded into a firm-period format, and then for the firm duration to be transformed into a binary variable. Firm duration is computed by the number of years that the firm is active. Specifically, if the lifespan of the i th subject (firm i) is completed, then the binary-dependent variable assumes unit value for the last time point (t_i) and zero for the rest of the time points ($1, 2, \dots, t_i - 1$) in the time interval.

In addition to the explanatory variables described above, we also include several control variables shown in previous studies to be significant in explaining firm survival in the tourism sector (Brouder and Eriksson, 2013; Falk, 2013; Kaniowski et al., 2008; Lado-Sestayo et al., 2016). First, following Brouder and Eriksson (2013), three separate dummies (hotels, restaurants and travel agencies, with spas as the reference group) are added to the analysis to control for any industry-specific effects that may affect survival rates. Second, 14 district dummies are included to identify the effects on firm survival of being located in a particular district. These district dummies may also capture the effects of economics of agglomeration. Finally, annual time dummies for non-crisis years are incorporated into the analysis to partly capture factors that vary with time (such as exchange rate movements).

Empirical results

Tables 4 and 5 present the effects of our covariates on firm survival in the Antalya region. The results are obtained from the discrete-time proportional hazard models with cloglog, logit and probit link functions. The dependent variable is binary or dichotomous, that is, its value is equal to one if the firm exits the market and zero otherwise. It is regressed on a set of firm, context and macroeconomic variables along with other control variables. Table 4 shows the results of these hazard model estimations without controlling for firm-level unobserved heterogeneity (non-frailty models). Table 5 reports the results obtained when unobserved heterogeneity is included through firm-specific random effects (frailty models).

As shown in Tables 4 and 5, the values and signs of the coefficients are similar for the various estimation procedures. Nonetheless, a choice is to be made between models with and without frailty. The log-likelihood values in Tables 4 and 5 suggest that the cloglog model gives the best fit to the data as compared to its probit and logit counterparts. In addition, the likelihood-ratio tests (ρ) reported in Table 5 fail to reject the null hypothesis of no unobserved heterogeneity for all model specifications, suggesting that the unobserved heterogeneity in our models is negligible. For the remainder of the analysis, therefore, we focus primarily on the results of the cloglog model in Table 4.

Before making a detailed interpretation of the results, it must be stated that the reported coefficients in Table 4 represent hazard ratios. A positive coefficient for an explanatory variable means that the hazard rate is increasing and equivalently that the survival rate is declining. Conversely, a negative regression coefficient implies decreased hazard and increased survival rates.

First, starting with firm-specific variables, the effects of age variables show a U-shaped relationship between age and firm exit (and an inverted U-shaped relation to survival). The coefficient on the linear term is negative and significant indicating that firm hazards decline as firms mature

Table 4. Estimation results of the discrete-time hazard models without random effects.

	Cloglog	Probit	Logit
Age	−0.2636*** (0.0914)	−0.1305*** (0.0468)	−0.2763*** (0.0968)
Age ²	0.1986*** (0.0351)	0.0948*** (0.0181)	0.2068*** (0.0372)
Size	−0.9544*** (0.0776)	−0.4661*** (0.0363)	−0.9968*** (0.0803)
Legal form	−0.2657*** (0.0768)	−0.1267*** (0.0381)	−0.2754*** (0.0811)
Foreign	−0.0677 (0.0660)	−0.0432 (0.0339)	−0.0772 (0.0698)
Tourism location	32.3491*** (6.7401)	13.7095*** (3.0764)	33.8906*** (7.2446)
Entry rate	2.3734*** (0.5889)	1.2590*** (0.2426)	2.5376*** (0.6007)
Regional specialization LQ	2.4856* (1.4447)	0.9548* (0.5376)	2.5772* (1.5321)
Market size	−3.7426*** (1.3945)	−1.8605*** (0.5873)	−4.0752*** (1.5244)
Market size ²	−0.2521*** (0.0965)	−0.0833*** (0.0417)	−0.2510*** (0.1013)
Herfindahl index	−1.2764 (1.0254)	−0.8143 (0.5296)	−1.4244 (1.1051)
Hotels	0.1412* (0.0794)	0.0933*** (0.0401)	0.1548* (0.0839)
Restaurants	0.1089 (0.0668)	0.0362 (0.0340)	0.1057 (0.0704)
Travel agency	0.3131*** (0.0695)	0.1926*** (0.0356)	0.3468*** (0.0737)
Spa centres	—	—	—
Economic downturn	19.1414*** (3.1741)	8.4788*** (1.3824)	20.1006*** (3.3230)
Political downturn	23.0514*** (3.7510)	10.1462*** (1.6327)	24.1663*** (3.9284)
District dummies ^a	Yes	Yes	Yes
Year dummies ^a	Yes	Yes	Yes
Observations	42,314	42,314	42,314
Log likelihood	−7906.56	−7912.77	−7907.35

Note: The table reports estimated coefficients and the corresponding robust standard errors (in parentheses). The dependent variable is a binary variable that takes the value of one in the year of exit for firms and zero otherwise. All models include also district dummies and year dummies. All left-censored observations are excluded from the data used in the estimations. LQ: location quotient.

^aEstimates are not reported but can be provided upon request.

*Statistical significance at the 10% confidence level.

**Statistical significance at the 5% confidence level.

***Statistical significance at the 1% confidence level.

until a critical age, while the positive coefficient on the quadratic term suggests firm hazards start to increase as the firm ages further. Hence, our results strongly confirm the liability of newness hypothesis, which predicts that younger firms are more likely to exit than their older counterparts (Disney et al., 2003; Mata and Portugal, 2002). This finding, however, contradicts Kaniovski et al (2008), who found that young tourism enterprises tend to be more diversified and innovative than older firms and provide customers leading-edge products and services, which help to attract new segments of tourists. They are therefore exposed to lower risks associated with shocks in specific destinations.

As expected, the results show that size exerts a negative and significant influence on the hazard rate, suggesting that larger firms are more likely to survive. This result is also consistent with Kaniovski et al. (2008) and Lado-Sestayo et al. (2016), who report a positive relationship between firm size and firm survival in the accommodation sector. Thus, our research confirms the findings of the rest of the accommodation sector literature, in which empirical studies hypothesize that larger firms are less exposed to business cycle downturns, exchange rate fluctuations or bad

Table 5. Estimation results of the discrete-time hazard models with random effects.

	Cloglog	Probit	Logit
Age	−0.2621*** (0.0943)	−0.1090* (0.0599)	−0.2761*** (0.0990)
Age ²	0.2045*** (0.0388)	0.1224*** (0.0238)	0.2086*** (0.0430)
Size	−0.9741*** (0.0961)	−0.5897*** (0.0831)	−1.0034*** (0.1113)
Legal form	−0.2724*** (0.0798)	−0.1633*** (0.0516)	−0.2775*** (0.0838)
Foreign	−0.0722 (0.0692)	−0.0592 (0.0442)	−0.0785 (0.0727)
Tourism location	32.4155*** (5.4093)	15.4124*** (2.9897)	33.9341*** (5.7494)
Entry rate	2.3697*** (0.4363)	1.3801*** (0.2246)	2.5406*** (0.4542)
Regional specialization LQ	2.4613** (1.0174)	0.9407** (0.4167)	2.5696** (1.0549)
Market size	−3.7779*** (1.1313)	−2.1168*** (0.6037)	−4.0881*** (1.2164)
Market size ²	−0.2497*** (0.0693)	−0.0896*** (0.0312)	−0.2505*** (0.0717)
Herfindahl index	−1.3021 (1.1244)	−1.0370 (0.6859)	−1.4326 (1.1918)
Hotels	0.1464* (0.0818)	0.1282** (0.0541)	0.1567* (0.0865)
Restaurants	0.1093 (0.0692)	0.0444 (0.0445)	0.1058 (0.0719)
Travel agency	0.3257*** (0.0796)	0.2540*** (0.0565)	0.3510*** (0.0889)
Spa centres	—	—	—
Economic downturn	19.1315*** (2.4780)	9.3622*** (1.3519)	20.1157*** (2.6023)
Political downturn	23.0736*** (2.9091)	11.3508*** (1.6308)	24.1935*** (3.0641)
District dummies ^a	Yes	Yes	Yes
Year dummies ^a	Yes	Yes	Yes
ρ	0.0525 (0.1374)	0.2201 (0.1068)	0.0086 (0.0996)
Observations	42,314	42,314	42,314
Log likelihood	7906.48	7911.93	7907.34

Note: The table reports estimated coefficients and the corresponding robust standard errors (in parentheses). The dependent variable is a binary variable that takes the value of one in the year of exit for firms and zero otherwise. The models constitute firm-specific random effects. All models include also district dummies and year dummies. All left-censored observations are excluded from the data used in the estimations. LQ: location quotient.

^aEstimates are not reported but can be provided upon request.

*Statistical significance at the 10% confidence level.

**Statistical significance at the 5% confidence level.

***Statistical significance at the 1% confidence level.

weather conditions due to their higher economies of scale and availability of both internal and external financial funds (Bruni et al., 2014; Kaniovski et al., 2008). Another explanation for this finding is that large firms in this sector are more innovative and provide more qualitatively diversified services than smaller ones, making them less vulnerable to fluctuations (Erkuş-Öztürk and Terhorst, 2018).

The legal form of tourism-related firms (proxied by the corporation variable) has a statistically significant negative effect on the hazard rate. That is, corporations are less likely to exit (i.e. they have higher survival rates) than their legal counterparts. This may be because of their generally higher levels of technology, capabilities and know-how and ownership advantages. This is in accord with Gemar et al. (2016), who report that the legal structure of a hotel (used as a proxy for size) is positively associated with the likelihood of firm survival. Although illegal (seasonal) employment is high in the tourism sector, as is the case in Antalya's tourism sector (Çelik and Erkuş-Öztürk, 2016), it seems that large size and corporate legal form improve firm survival while also contributing to legal employment practices in this region.

Contrary to Hypothesis 3, foreign ownership does not enhance the survival probability of tourism-related firms. This finding supports Mata and Portugal (2002) and Taymaz and Özler (2007), who also report little difference in the survivability of foreign-owned and domestically owned firms. It thus seems that foreign ownership is not a critical factor for firm survival in the Antalya region.

Turning now to the results for context-specific variables, we find that firms located in a tourism location have significantly lower chances of survival. This contradicts our hypothesis that such firms would have an increased chance of survival. The unexpected and positive coefficients of tourism location may suggest that these locations are already saturated, resulting in fierce competition between tourism-related firms. The negative impact of tourism location on firm survival was further exacerbated by massive numbers of cancellations by foreign visitors during the political crisis in 2015–2016. In support of these results, Gemar et al. (2019) also find that hotels located in tourism destinations in the Canary Islands have higher failure rates than those in other locations.

The entry variable also reduces the survival probability of tourism-related firms. This confirms our hypothesis that the entry of new firms increases competition, which reduces the chances of survival. Kaniovski and Peneder (2008) similarly found a larger negative impact of net entry on survival for firms in the service industries when compared to manufacturing. Our finding also supports Erkuş-Öztürk and Terhorst (2018), who claim that many newcomers in the Antalya region, especially hotels, are generally large firms offering more innovative and diversified customer services, which favours more competitive younger firms at the expense of less dynamic incumbents. This also confirms our previous finding that large firms have a higher survival rate than small firms.

The duration analyses demonstrate that specialization damages firm survival. This is in line with claims in the economic geography literature that specialized regions benefit from localization economies. Our finding on regional specialization in a tourism region is in line with Brouder and Eriksson (2013), who conclude that firms operating in tourism-specialized regions have no survival advantage. This finding reinforces the argument that strong competition within such a cluster increases the risk of firm failure (Porter, 1998).

At the same time, the effects of market size and its squared term on firm exit are significantly negative. This suggests that the probability of firm survival increases with market size at an increasing rate. In other words, the benefits of being located in a tourism cluster increases as the cluster grows. This is in line with previous findings (Kaniovski et al., 2008) that a dense tourism destination has a more differentiated supply structure and offers visitors a wider spectrum of attractions, leading to higher survival rates for its tourism-related firms.

Surprisingly, we find that the level of concentration/diversification, as measured by the Herfindahl index, has no significant impact on firm survival. This contradicts previous studies which found that new entrants to a highly concentrated destination market are likely to face barriers and an increased hazard rate because large incumbent firms, especially hotels, have economies of scale and greater access to internal and external funds. This contradicts the Kaniovski et al. (2008) and Lado-Sestayo et al (2016), who report a positive link between increased industry concentration and firm survival in the accommodation sector.

As mentioned in ‘Hypotheses’ section, this study aims to analyse the effects of economic and political shocks on the firm survival in Turkey’s Antalya region. We are particularly interested whether these shocks had differential impacts on firm survival. In doing so, we construct two dummy variables corresponding to the economic crisis of 2008–2009 and political crisis of 2015–

Table 6. Foreign and domestic tourist arrivals in the Antalya region during the year 2012–2016.

Years	The top three source countries for foreign tourist arrivals			Total foreigner numbers (%)	Domestic numbers (%)
2012	Germany 2,884,277	Russian Federation 2,761,145	Netherlands 528,612	10,183,562 (79.24)	2,603,361 (20.36)
2013	Russian Federation 3,338,166	Germany 2,834,413	Netherlands 547,370	10,827,654 (78.49)	2,966,418 (21.51)
2014	Russian Federation 3,489,007	Germany 2,987,577	Netherlands 548,040	11,944,480 (81.49)	2,712,991 (18.51)
2015	Germany 3,148,458	Russian Federation 2,838,134	Netherlands 503,188	11,257,311 (77.19)	3,326,199 (22.81)
2016	Germany 2,019,298	Ukraine 576,434	Russian Federation 492,564	6,440,920 (56.86)	4,887,490 (43.14)

Source: Antalya Provincial Directorate of Culture and Tourism

2016. The results show that both shocks lower the survival prospects of tourism-related firms in the Antalya region, in line with Varum and Rocha (2012) and Varum et al. (2014). The negative and significant coefficient of the economic downturn variable is generally consistent with the hypothesis that firm exits are more common during unfavourable macroeconomic conditions. Previous studies report similar evidence that macroeconomic conditions influence firm survival in the tourism sector (Falk, 2013; Gemar et al., 2016; Kaniovski et al., 2008). However, our findings additionally reveal that there was a greater risk of firm shutdown during the political crisis period than the economic crisis period. This may be because tourists often rate a destination's safety and security as the most important factor when choosing a tourism destination. Table 6 clearly demonstrates how foreign tourism reacted immediately and severely when Turkey's security situation deteriorated in 2015–2016. This also implies that tourism-related firms in the Antalya region, particularly resort hotels, had no contingency plan for dealing with mass cancellations triggered by political unrest, leading to higher exit rates for these firms due to the political crisis period than the economic crisis.

Finally, we probe the effect of business type on firm duration by including three dummies (hotels, restaurants and travel agencies), using spas as the reference group. The estimated coefficients of the business type dummies show that there are differences across business types. In particular, the results indicate that the estimated coefficients of the hotels and travel agencies variables are positive and significant whereas the coefficient of the restaurant variable is statistically insignificant. Thus, there is strong evidence suggesting that hotels and travel agencies tend to have higher hazard rates. This evidence implies that hotels and travel agencies in the Antalya region rely heavily on foreign guests (Table 6), making these businesses more sensitive to macroeconomic and political shocks. By contrast, restaurants in the Antalya region appear to be more adaptable because, being in the city centre, they are less reliant on foreign visitors as they can serve both local residents and foreign visitors. In Antalya's subprovince tourism centres of, such as Belek, there is no restaurant market serving for all-inclusive tourism. Thus, restaurants may be more able to nullify or reduce the damage from economic and political crises on their performance, thereby reducing their probability of exit. Taken together, these results point to the conclusion that economic and political crises have a detrimental effect on tourism-related firms' survival;

however, such an effect is more pronounced in industries with a greater share of their revenue coming from foreign visitors.

Conclusions

This article analysed the survival of tourism-related firms by including the effects of economic and political crises in addition to firm- and context-specific variables in the Antalya tourism region. The analysis is based on data for 7115 firms from 2000 to 2016 in four tourism-related industries: hotels, restaurants, travel agencies and spas. Preliminary results show that firms in the hotel sector are more likely survive than their counterparts. In contrast, restaurants, travel agencies and spas have low survival rates confirming that survival rates are significantly worse in industries with high sunk costs than those with low sunk costs. In addition, younger and small-/medium-sized firms in the Antalya tourism region seem to be more sensitive to economic cycles and political turmoil.

To explore the impacts of economic and political crises on firm survival, we also employed discrete-time survival models. The key finding is that the likelihood of firm survival in the tourism sector decreased during both economic and political crises, but the effect was stronger during the political crisis. These findings are robust to a variety of alternative specifications of the hazard models. In addition, we found that several firm-specific factors, such as age, size and legal form (corporation), contribute positively to firm duration. However, foreign ownership has no significant influence on firm duration. The study also indicates that context-specific variables, such as tourism location, entry rate, subregional specialization and two types of business (namely hotels and travel agencies), reduce firm survival in the tourism sector, whereas market size increases it. Finally, the Herfindahl index and restaurant dummy variables had no significant effects.

Overall, the results show that the tourism industry in the Antalya region is extremely sensitive to the macroeconomic and political environment. The results further suggest that dependence on any single source market significantly reduces firm survival during economic and downturns. Policymakers should therefore be careful to support not just one sector for the city's development because this would create homogenization in the economy which risks making the city more fragile and less resilient to crisis. This is especially crucial for tourism cities, which are known to be very fragile to shocks. Tourism-related firm managers should make their firms more resilient to shocks by diversifying their services and choosing locations with large markets and diversified economies. To avoid the negative effects of political crisis specifically, firm managers should avoid focusing on one market (such as the German or Russian tourist market). Our results also suggest that tourism-related firms located in a more urbanized economy and a dense tourism destination with a large market tend to have higher survival rates than in a more localized region. This finding thus contributes both economic geography and tourism geography literature by showing the positive role of urbanization economies on tourism-related firms' survival prospects compared to localized economies in crisis-ridden tourism cities.

Our findings contribute to the understanding of the determinants of survival of tourism-related firms in tourism-dependent destinations that are in crisis, and allow a number of policy implications to be suggested. To improve the probability of firm survival, policymakers should design structural reforms that diversify the supply of tourism services and the tourist markets, strengthen tourism clusters with large market, increase the carrying capacity of tourism destinations and tourist facilities, support larger and older companies in tourism regions, and enhance the overall quality of products and services within the tourism industry. Such changes can make tourism-

dependent cities more resilient, strong and sustainable during crises. This work also illustrates the great need for further research to assess the effects of macroeconomic conditions, and the contextual and place-based characteristics of the region in addition to firm-based characteristics in analysing firm survival, which is missing in the current literature.

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