

## Investigating the Interactions between Populations: Five-Star Hotels in Turkey

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### Abstract

In this study, it was to illustrate how the interactions between populations may affect the founding rates of the organizations in these populations. Five-star hotels are seen either having a chain affiliation or as independent hotels. We examined the population of chain hotels and the population of independent hotels to observe the interactions between populations. We computed the densities of the two populations, the number of entries and exits into or out of the populations, room capacities and geographic locations of the hotels. Therefore, we demonstrate the differences between the two populations in terms of densities, size and location. When the density of chain hotels increases above average, the density of independent hotels decreases. Otherwise, when the density of independent hotels increases above average, the density of chain hotels is not affected. On these bases of hotel populations between 1976 and 2014, we formulated exploratory hypotheses to be tested on how the interaction between the two populations may affect their founding rates.

**Keywords:** Population Dynamics, Organizational Ecology, Organizational Density, Organizational Founding

### 1. Introduction

In Organizational Ecology Theory that brings a different dimension to the relationship between organizations and their environment, the unit of analysis is not just an individual organization, and environmental selection is emphasized (Hannan and Freeman, 1977). In contrast to the view that organization plays an active role to adapt to the environment and makes changes in its structure according to the environmental changes, Organizational Ecology Theory claims that the environment is selective and when the environmental conditions change, only organizations compatible to the new environmental conditions can survive. The scope of the theory is to investigate the effects of environmental changes and the interactions between populations on organizations' mortality and survival rates. Since the unit of analysis is not just the organization, organizational populations come into this line of research. Scott (1981) and Romanelli (1991) state that populations consist of organizations that have similar organizational forms. Hannan and Freeman (1977) define organizational form as a set of associated organizational characteristics. Populations are similarly affected by the environmental changes, and benefits from similar resources and function similarly.

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More specifically, populations are formed as a result of processes that isolate a population from other population by including technical incompatibilities and institutional actions such as governmental arrangements (Hannan and Freeman, 1977). In population level, how the organizational founding and mortality rates are affected by the existence and density of other organizational populations (Hannan and Freeman, 1989) is very important question. In this study, the level of analysis is population level (hotel population), and the unit of analysis is hotel organizations. Populations are sets of organizations that interact with each other and have common forms competing for common resources. In this context, a population is constrained by the flow of information, organizational competition, the distribution of natural resources and governmental arrangements (Hannan, Polos, and Carroll, 2007). In the literature, much research has been done by studying a single population and its vital rates (e.g. Carroll and Swaminathan, 1992, American brewing industry; Hannan, Carroll, Dundon, and Torres, 1995, automobile producers; Boone, Bröcheler, and Carroll, 2000, Dutch Auditing Firms). The interactions between populations are under researched (Yeloğlu, 2007).

In this paper, drawing from population dynamics and density dependency literature (Organizational Ecology literature in general), we examine the interaction between two different hotel populations. Five-star hotels have either a chain affiliation or they are independent hotels. We examined the hotel populations between 1976 and 2014 because the first exit from the population was in 1990, and hotels organizations that exited from the industry were established in 1976. Crisis that were experienced in the country and had negative effects on the hotel populations are regarded as period effects. Hotels with chain have the advantage of having operating knowledge and economies of scale. They have high reputation. They also can access vital resources to continue their life. These factors contribute to the viability of the chain members. We studied the population of chain hotels and the population of independent hotels to see the interactions between populations. To be able to do this, we compute the densities of the two populations using the number of entries and exits into or out of the populations, room capacities and geographic locations of the hotels for each year. Based on these findings, we exhibit the differences between the two populations in terms of densities, size, and location. Our examination of five-star hotel population shows when the density of chain hotels grows above average, the density of independent hotels declines. The study also indicates when the density of independent hotels grows above average, the density of chain hotels is not affected. Based on our examination of five-star hotel populations between 1976 and 2014 and by drawing from the theory, we formulated exploratory hypotheses to be tested on how the interaction between the two populations may affect their founding rates. Organizational strategists, thus, may benefit from the future findings when they are confronted with location choices and also organizational form choices for their establishments.

We believe our study makes several contributions. From organizational ecology perspective, this paper highlights the various institutional landscapes that organizations face. It analyzes the patterns of the organizational density in an industry that shows the changes in the number of organizations over a long period of time to uncover whether the density of a population affects the other's density when these two populations interact. And also, by testing the hypotheses presented in this study, it can be found how the founding rates of a population may be affected by other's presence. This future contribution may pave the way for organizational strategists to benefit from these future findings when they are confronted with location choices and also organizational form choices for their establishments. The structure of the paper is as follows. The following section presents theoretical framework on population dynamics (organizational vital rates such as founding and mortality rates) and density dependency. The paper then discusses the methodology used in data collection and analysis. Next, we present our findings; and we conclude with a discussion of the implications from the study.

## **1. Population Density And Interactions Between Populations**

### **2.1 Population Density**

Population density is the total number of the organizations in a population (Carroll and Hannan, 1989; Hannan and Freeman, 1988). When an organizational population emerges and density is low, competition is low as well since the resources are relatively abundant. Organizational communities indicate a slow growth. Then, the number of the organizations reaches its peak quickly. Organizational form gain legitimacy until the number of organizations (density) reaches its peak. An increase after this point does not contribute to legitimacy. As a result of increases in both competition and density, organizational founding rates decrease while mortality rates increase.

This is followed by a slightly decline in the number of organizations in the population. Followed by this decline, the number of organizations becomes fixed. Even important environmental changes occur, this number does not change. This line of development in the population is based on competition and gaining legitimacy (ÖnderveÜsdiken, 2007). Hannan (1986) has synthesized organizational ecology theory (Hannan and Freeman, 1977) and institutional theory (Meyer and Rowan, 1977, Meyer and Scott, 1983, DiMaggio and Powell, 1983) to build a relationship between organizational founding and mortality rates and population density. The main assumption has been that mortality rates would increase linearly with population growth (Singh and Lumsden, 1990).

Hannan (1986) has hypothesized that there is U-shape relationship between organizational failure rates and organizational density, and that there is an inverted U-shape relationship between organizational founding rates and organizational density. This inverted U-shape relationship between density and founding rates means that founding rates increase at the beginning, and then decrease while density continue to increase (Ranger-Moore, Banazsak-HollandHannan, 1991). The U-shape relationship between density and failure rates means that failure rates decrease at the beginning, and then increase while density continue to increase (Lazzeretti, 2006; Wissen, 2004). The assumed relationship between population density and founding and mortality rates is supported in studies conducted in many areas (for detailed information see Swaminathan, 1995, Silverman, Nickerson and Freeman, 1997, Hannan and Freeman, 1989; Barnett and Carroll, 1987).

Singh and Lumsden (1990) have underlined that density dependency model can be easily extended by questioning whether a population's mortality rate increases when other population's density increases by the help of modeling the effects of density between populations in terms of including the competition between populations. Density dependency model assumes that organizational populations evolve over time in the wake of legitimacy and competition processes that are two fundamental social processes. By following Meyer and Rowan for describing legitimacy as a situation similar to social status Hannan (1986) has put forward that early newness of an organizational form prevents its immediate acceptance from authorities, suppliers, customers, and lenders. As organizations that use this specific form spread out (as the number of the form increases), these obstacles are broken and the organizational form turns out to be taken for granted. Once legitimation process is completed, then increases in the number of this organizational form have no effects on legitimation. These increases, however, trigger competition processes. Organizational density, consequently, forms legitimacy and competition (Carroll et.al., 1993).

Baum and Oliver (1992) have suggested that the relational density made measureable by them and the capability of benefiting from institutional infrastructure (such as legitimacy) affect the mortality rate. Relational density is "the number of ties between organizations and their institutional environment" (p. 540). In their study on day care center, Baum and Oliver (1992) have examined the effects of both relational density and population density on founding and failure rate of day care centers' population, and found that relational density has increased founding rates by decreasing failure rates in long-term. Additionally, the authors have stated that day care centers that have had direct relationships with their institutional environment have an advantage of survival at a higher rate than those that have not had any kind of relationship.

## 2.2 Interactions Between Populations

In their study of relational density, Baum and Singh (1994a; 1994b) have disaggregated population density as niche overlap density and niche non-overlap density to measure potential competition and potential mutual dependence. Niche overlap has been determined by ages of children that the center has a license to register the children. Niche overlap density and niche non-overlap density in the population of day care center determine the degree of commensalism and mutualism among organizations in a niche of a population, and this, in turn, affects the rate of new entrepreneurs in the niche. Organizational niches represent resources requirements and efficiency capacities in a population and the authors' focus have been on the densities of the niches that have overlapped (i.e. day care centers that servesame age group). The authors have concluded that niche overlap density has decreased the founding rates and increased mortality rates, and niche non-overlap density that has mutual dependency effects has increased the founding rates and decreased the mortality rates. Hannan and Freeman (1984) have underlined that newly-founded organizations have had lower level of reproducibility in arrangement and regulations than that of prior foundings, and therefore, newly founded organizations have had to rely on the cooperation of foreigners.

The developments of relief, trust, and relationships and at the same time working with routines take time. Initially, the rate of learning by doing and learning by benchmarking is higher. Existing organizations are more advantageous than newly-founded organizations because continuing to existing routines are easier than forming new ones or borrowing from old routines. Actually, this is on the basis of learning curve—declining cost curve.

Aldrich and Ruef (2006) have stated that relations between two populations turn concurrently around two axes: symbiosis and commensalism. Commensalism implies that units make parallel demands on the environment and try to find the similar resources. This leads to competition among the populations. The degree of competition among populations is contingent on the comparative size of each population and the degree of resemblance or niche overlap among them. Aldrich and Ruef (2006, p. 244) have underlined that there are eight types of relations between interacting populations. They have underlined that there have been six different forms of commensalism, and the seventh relationship between interacting populations has been symbiosis. They have added the eighth form of relations: dominance. Commensalism includes full competition (“growth in each population detract from growth in the other”), partial competition (“relations are asymmetric, with only one having a negative effect on the other”), predatory competition (“one population expands at the expense of the other”), neutrality (“populations have no effect on each other”), partial mutualism (“relations are asymmetric, with only one population benefiting from the presence of the other, but not vice versa”), and full mutualism (“two populations in overlapping niches benefit from the presence of the other”). Symbiosis means that “two populations are in different niches and benefit from the presence of the other”. The eighth form, dominance, means that “a dominant population controls the flow of resources to other populations; effects depend on the outcome of commensalistic and symbiotic relations” (Aldrich and Ruef, 2006, p. 244).

From the *environmental effects* aspect, in Organizational Ecology’s research program, the effects of processes within populations and between populations, organizational attributes such as age and size, and changes in societal level on organizational founding (birth) and exit rates (death) are examined (Önder and Üsdiken, 2007). Therefore, defining organizational founding and exit that shape organizational demography is very important. Organizational demography examines the processes that belong to the lives of organizations (Yeloğlu, 2007). Additionally environmental effects have been studied by researchers in Turkey such as Kaya and Ataman, 2013, Yeloğlu, 2007, Karpak, Kaya, and Eunni, 2010. Baum (1996) defines the processes related to organizational founding and exit as the demographic, ecologic, and environmental processes. Demographic processes are defined with organizational age and size variables; ecologic processes are defined with the niche width dynamics composed of generalist and specialist strategies, population dynamics that are composed of organizational foundings and failures, and organizational density variables; environmental processes are defined with political turmoil, government arrangements, institutional variables composed of institutional linkages, and technological variables composed of technologic cycles. All these variables affect the founding and exit of the organizations, i.e. population dynamics.

As an example of the interactions between populations based on *ownership status*, Li (2008) has investigated the competitive interactions between foreign and domestic banks in banking population in California market and found that foreign banks’ density functioning in the market had a U-shaped relationship with the entry rate of U.S. banks by underpinning the argument that domestic banks’ expansion might be the result of the foreign investment. Even though entry and existence of foreign banks were not a barrier for the entries of the domestic banks, the existence of domestic banks prevented the foreign banks’ entries. This finding may indicate that the ownership status (international or domestic) of the organizations in a population may have an effect on the competitive interactions between them.

## **2. Investigating The Interactions Between Five-Star Hotel Populations And Organizational Founding Rates**

Our aim with the study is to observe the chain and independent hotel populations in a long time period and be able to see whether they interact with each other and affect each other’s founding rates. This observation may help us formulating hypotheses related to interactions between populations. According to the theory, characteristics of the organizations in a population affect the interactions between populations and their vital rates. Entries in a population or organizational foundings will have primarily an effect on its density. Each population is continually exposed to an evolution.

During this evolution, organizational foundings and failures occurred have an effect on both population density (total number of the organizations) and carrying capacity (maximum number of the organizations that a population can carry).

When it comes to more than one population, and there is an interaction between populations, these interactions will have increasing or decreasing effects on founding rates of the populations. Evaluating these effects from the scope of the theory, our argument is that from the two different organizations, one that has more legitimacy over the other, an increase in its density will have a decreasing effect on the other's founding rate. Research scope is the chain and independent five-star hotels with 'Tourism Operation License' by Ministry of Culture and Tourism.

### 3.1 Methodology

In this paper, we used primary and secondary sources for the chain and independent five-star hotels in Turkey between 1976 and 2014. Because of data unavailability between 1977 and 1981, we could not analyze the industry through these years. We made telephone interviews with hotels as primary sources, interviews with Ministry of Culture and Tourism and TUROB (Touristic Hotels and Investors Association). We obtained ownership structure, the number of foundings and failures, hotels' size (room and bed capacity), and location data of 496 hotels between 1976 and 2014. We examine the industry based on the periods of 1976-1982, 1994-1996, 2001-2003, and 2007-2009 as it is observed in the population density graphics that in these periods there were prominent differences among the population densities. The most important criterion to determine these periods was crises that are experienced in Turkey. Historically, 1980, 1994, 2001 and 2007 crises form breaking points on the developments in financial terms.

### 3.2 Density and Entries into the Populations:

Density of chain and independent hotel populations based on each year is given in Table 1. Population density is calculated by adding the number of hotels in the previous year (t-1) to the difference between the number of hotels founded and the number of hotels exited in the current year (t) (Formula I).

Density (t) = Then number of hotels in the previous year (t-1) + [(hotels founded in current year(t) – hotels exited in current year (t)]

After 1982, an important period started for tourism investments. Tourism Encouragement Law No: 2634 came into force in 1982 and investments were primarily directed to developing tourism areas, additionally tax and customs exemption were provided to investors. During this year, 320 tourist facilities with 400.000 bed capacity along Çanakkale-Mersin shoreline were provided allocated land and certified. Bed capacity was 150.000 in Antalya with tourism development projects. 1.2 million tourists in 1980, thus, reached 21 million in 2005. In 2001, with the "Notification of Incorporating the Unfinished Investments into the Economy", a new opportunity was provided to the unfinished accommodation facilities in Black Sea, East and Southeast region. Except Çanakkale-Mersin shoreline and Nevşehir province, Tourism Encouragement Certificates were delivered to tourism investments (Toprak, 2008).

On the other hand, it is observed that the effects of crisis reflect to the number of hotels in the populations. In 1994 and 1996 period, there were 23 entries into the chain hotel population and 10 entries into the independent hotel population. Similarly, in 2001, there were 26 entries into the chain hotel population, and 13 into the independent hotel population, and in 2007, there were 53 entries into the chain hotel population, and 32 into the independent hotel population. Density of chain hotel and independent hotel populations, and entries into these populations are presented in Graph-1 and 2 based on each year.

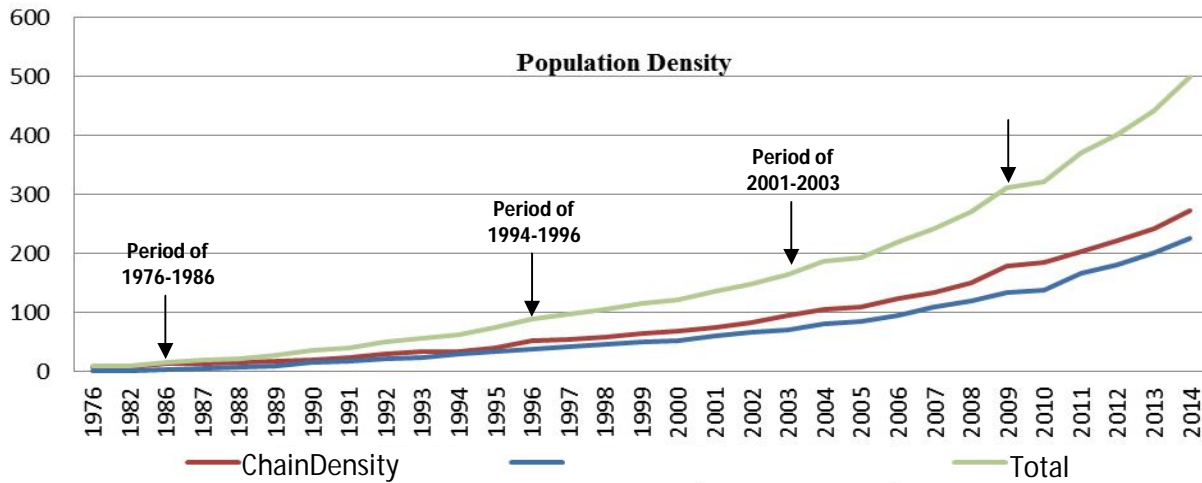
In the literature, it is defined as a social process that organizations enter into a population, and continue their life by interacting with other organizations. By referring political turmoil, Dobrev (2001) has underlined that the power of the political turmoil has had deterrent effects on organizational founding, institutionalized political decisions, on the other hand, have had positive effects on organizational founding. Contributing to Dobrev's (2001) proposition, Robins (1985) has stated that social processes create mutual dependence between organizations, and this dependency increases their economic power. Baum and Oliver (1992) and Tucker, Singh, and Meinhard (1990) have advocated that arrangements made by political decision makers increase legitimation and reproduce interorganizational competition, and thus affect organizational founding and exit rates.

Similarly, Barron, West, and Hannan (1998) have stated that deregulation (the removal of government control over the functioning of markets) has increasing effects on organizational founding rates in financial environments. Onder and Usdiken (2007) have underlined that when the number of organizations with a particular form increases, the degree of adopting this form by other organizations increases, and the founding rates of the organizations with this form gain speed.

**Table 1: Hotel Populations of Chain and Independent Hotels Based on Each Year**

YEARS	TOTAL (DENSITY)	DENSITY (INDEPENDENT HOTELS)	DENSITY (CHAIN HOTELS)	TOTAL (ENTRIES)	ENTRIES (INDEPENDENT HOTELS)	ENTRIES (CHAIN HOTELS)	EXITS (INDEPENDENT HOTELS)	EXITS (CHAIN HOTELS)
1976	9	2	7	1	-	1	-	-
1982	10	2	8	1	-	1	-	-
1986	16	3	13	6	1	5	-	-
1987	19	5	14	3	2	1	-	-
1988	22	7	15	3	2	1	-	-
1989	28	10	18	6	3	3	-	-
1990	35	15	20	8	5	3	-	1
1991	41	17	24	5	2	3	-	-
1992	50	21	29	9	4	5	-	-
1993	57	24	33	7	3	4	-	-
1994	64	27	37	7	3	4	-	-
1995	77	32	45	13	4	9	-	1
1996	90	35	55	13	3	10	-	-
1997	101	43	58	9	6	3	-	-
1998	109	47	62	8	4	4	-	-
1999	119	51	68	10	4	6	-	-
2000	125	53	72	6	2	4	-	-
2001	135	58	77	10	5	5	-	-
2002	150	65	85	12	4	8	-	-
2003	168	70	98	17	4	13	-	-
2004	189	81	108	21	11	10	-	-
2005	197	85	112	8	4	4	-	-
2006	220	96	124	23	11	12	-	-
2007	254	102	133	16	7	9	1	-
2008	281	113	149	27	11	16	-	-
2009	323	127	177	42	14	28	-	-
2010	239	136	187	19	9	10	-	-
2011	370	164	206	47	28	19	-	-
2012	403	180	223	33	16	17	-	-
2013	444	201	243	44	24	20	3	-
2014	496	223	273	52	22	30	-	-

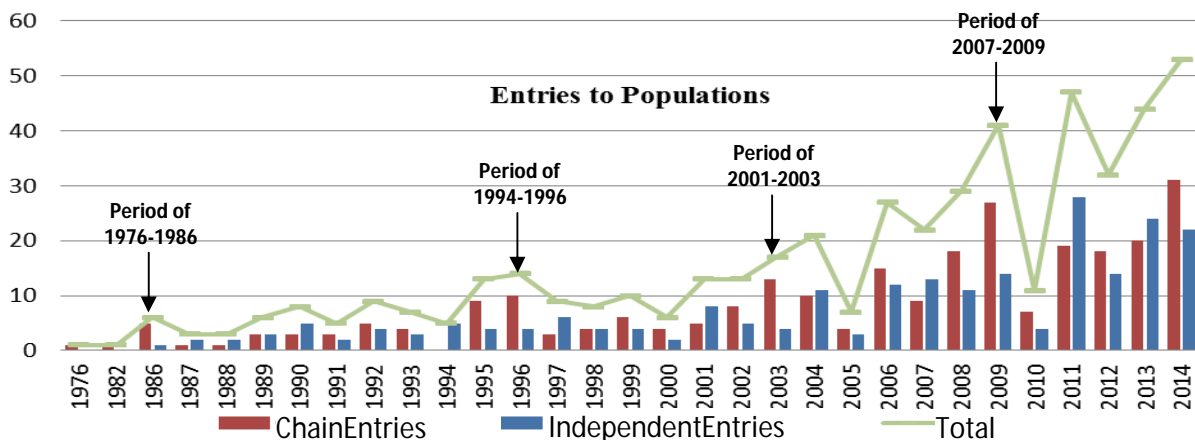
In Table 1, it is seen that the entries in the chain hotel population are specifically increasing at a higher rate with the contribution of "Tourism Encouragement Law" No: 2634, which came into force in 1982. Additionally, while the number of chain hotels was 13, the number of independent hotels was only three in 1986.



**Graph 1: PopulationDensitiesFrom 1976-2014**

According to Carroll and Harrison (1994), organizations provide a relative advantage to each other in historical process. Their interactions with each other are also factors for the coexistence of the organization. Organizations' interactions both with organizations in the same population and organizations in other populations are the decisive aspect of their lives. According to Emery and Trist (1965), when environmental turbulence that is independent from populations, suddenly realized, and has effects on the organizations in medium and long term affect the organizational founding rates. Swaminathan (1995) has contributed to this view by underlying that in combination with the turbulence, stable or fluctuated environments have effects on organizational founding rates.

In Graph-1, which is drawn by the help of Table 1, it is seen that there is an increase in the density of the two populations from 1976 to 2014. What is interesting here, the differences among the entries into the populations are very high in 1986, 1996, 2003, and 2009. Especially in the determined periods, the cause of quick increase in the entries into the chain hotel population can be best explained by being foreign partnerships in the founding capital of these hotels. Thus, management teams of these hotels were able to make investments without being affected by the crises in the country. On the other hand, the capital structure of independent hotels were based on domestic investors in general, therefore, they were affected by crises at a higher rate than the chain hotels were.



**Graph 2: Entries to Populations From 1976-2014**

An interesting point in Graph-2 is the high entry rates into the chain population in the determined periods. Another interesting point is that there is a high entry rate into the independent hotel population in 2011. In 2001, 28 independent hotels were entered in the population. In chain hotels' case, the highest entry rate was held in 2014 by 30 entries.

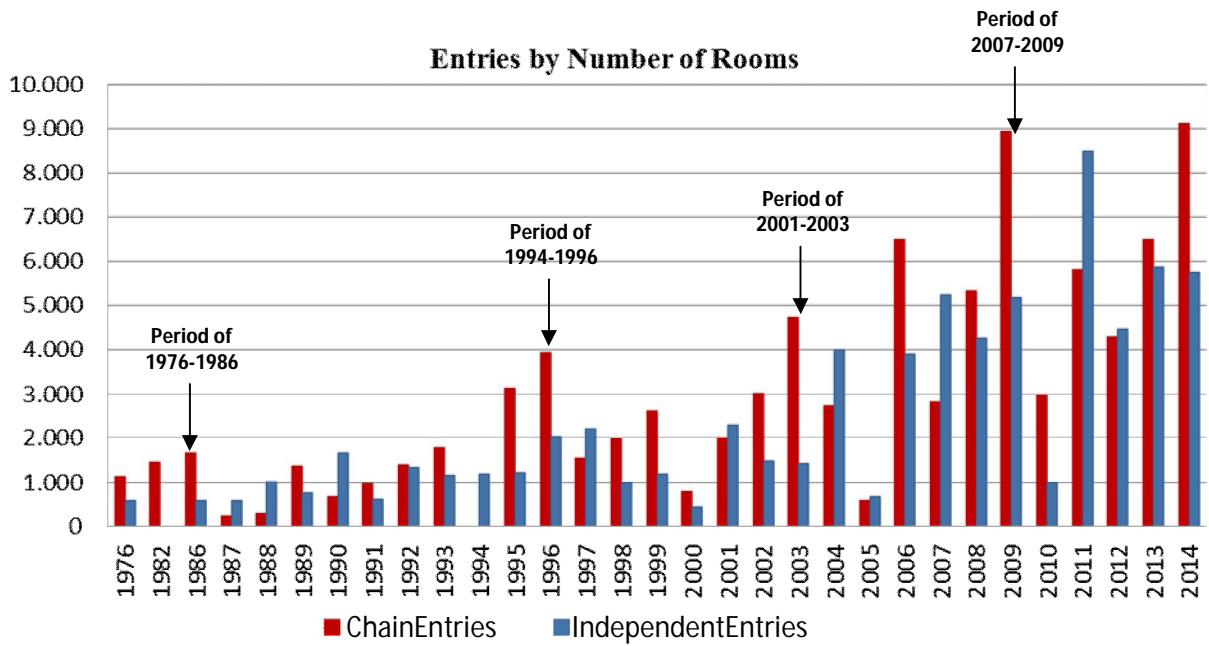
*Room capacities and the newly founded hotels' room capacities of the populations of chain and independent hotels:* We also count the room capacities of the chain and independent hotels and the room capacities of the entering hotels' into the two populations based on each year to be able to observe how their interaction may have an effect on the entry rate of each other.

**Table 2: Room Capacity Density of Chain and Independent Hotels**

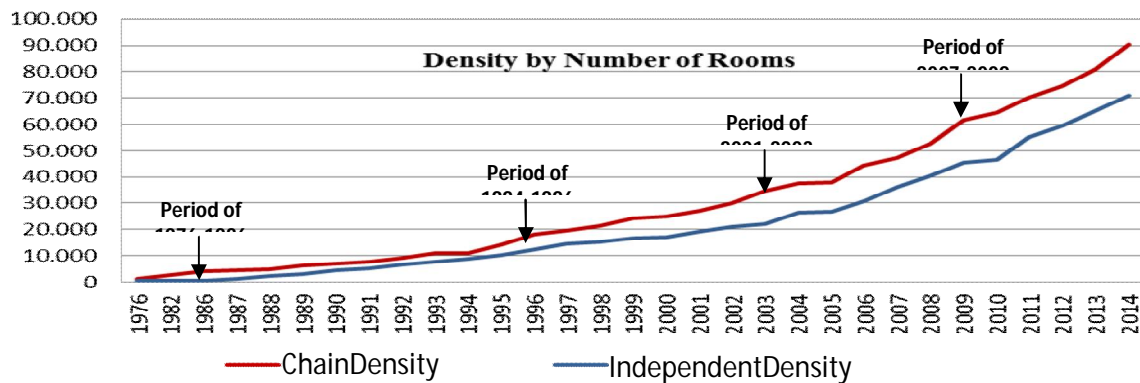
YEARS	ENTRIES		ROOM CAPACITIES DENSITY	
	ROOM CAPACITIES (INDEPENDENT)	ROOM CAPACITIES (CHAIN)	ROOM CAP. DEN. (INDEPENDENT)	ROOM CAP. DEN. (CHAIN)
1976	597	1.125	597	1.125
1982	0	1.450	597	2.575
1986	597	1.664	597	4.239
1987	598	243	1.195	4.482
1988	1.020	310	2.215	4.792
1989	760	1.376	2.975	6.168
1990	1.645	664	4.620	6.832
1991	623	968	5.243	7.800
1992	1.349	1.384	6.592	9.184
1993	1.173	1.781	7.765	10.965
1994	1.181	0	8.946	10.965
1995	1.231	3.140	10.177	14.105
1996	2.038	3.900	12.215	18.005
1997	2.204	1.554	14.419	19.559
1998	985	1.963	15.404	21.522
1999	1.193	2.616	16.597	24.138
2000	453	787	17.050	24.925
2001	2.299	2.018	19.349	26.943
2002	1.480	3.031	20.829	29.974
2003	1.415	4.735	22.244	34.709
2004	4.004	2.722	26.248	37.431
2005	671	589	26.919	38.020
2006	3.891	6.496	30.810	44.516
2007	5.244	2.810	36.054	47.326
2008	4.257	5.335	40.311	52.661
2009	5.174	8.935	45.485	61.596
2010	998	2.976	46.483	64.572
2011	8.490	5.787	54.973	70.359
2012	4.468	4.288	59.441	74.647
2013	5.859	6.500	65.300	81.147
2014	5.745	9.128	71.045	90.275

Based on Table-2 that reveals the room capacities and the newly founded hotels' room capacities of the populations of chain and independent hotels, we draw Graph-3 and Graph-4.





Graph 3: Densities Rooms of Populations From 1976-2014



Graph 4: Entries by Number of Rooms From 1976-2014

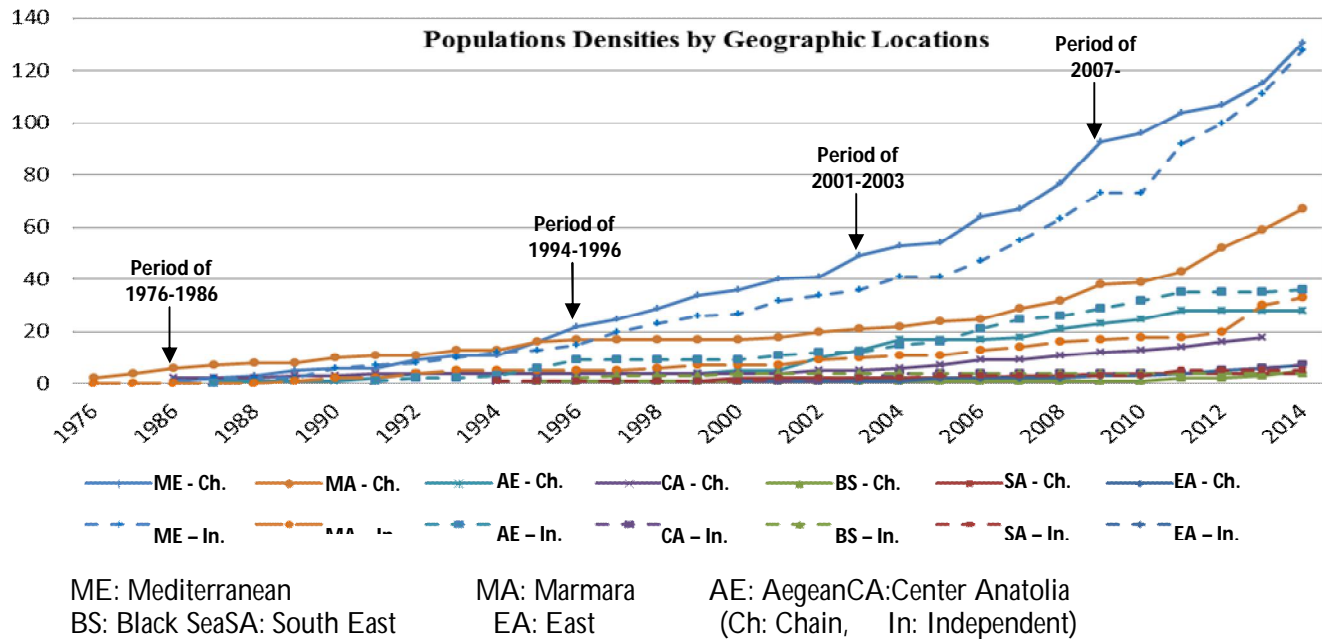
Graph-3 shows that room capacities of the population of chain hotels have been increasing at a higher rate than that of independent hotels. This is similar with the Graph-4 by adding the knowledge that room capacities of the newly founded chain hotels have been greater than that of independent hotels. According to research done by Tourism and Investment Journal, 22 five-star hotels were founded in the first quarter of 2015; 15 of them were chain hotels with 3440 rooms while seven of them were independent hotels with 1350 rooms. In the second half of 2015, 26 five-star hotels have been planned to be founded; 18 of them have been chain hotels with 4800 rooms while 8 of them have been independent hotels with 2200 rooms. The total number of rooms of chain hotels, therefore, is going to exceed 100.000, and the total number of rooms of independent hotels will be around 75.000 (TYD, 2015).

*Entries and Densities based on Location Site of the Populations of Chain and Independent Hotels:* We computed entries and densities of the populations of chain and independent hotels in terms of their location sites based on each year as presented in Table-3 and draw Graph-5 to observe the pattern of the changes.

**Table-3: Entries and Densities based on Location Site of the Populations of Chain and Independent Hotels**

YEAR	EAST			SOUTHEAST			BLACK SEA			CENTER ANATOLIA			AEGEAN			MARMARA			MEDITERRANEAN		
	Entries		Density	Entries		Density	Entries		Density	Entries		Density	Entries		Density	Entries		Density	Entries		Density
	C.	I.		C.	I.		C.	I.		C.	I.		C.	I.		C.	I.		C.	I.	
1976															2			2			
1982															2			4			
1986									2		2				2			6	1	1	2
1987										2		1		1			7	1	1	4	
1988										2			1	1			8	1		5	
1989									1		3			1		1	9	2		7	
1990											3			1	2	1	12	1	4	12	
1991									1		4	1	1	3	1		13		1	13	
1992											4	2	1	6		2	15	3	1	17	
1993											4			6	2	1	18	2	2	21	
1994					1	1				1	5		1	7			18		2	23	
1995						1	1				5		3	10	3		21	5	1	29	
1996						1		2	3		5		3	13	1		22	6	2	37	
1997						1		1	4		5			13			22	3	5	45	
1998						1			4		5			13		1	23	4	3	52	
1999				1		2			4		5			13		1	24	5	3	60	
2000	1		1	1		3		1	5		5	1		14			24	2	1	63	
2001			1		1	4			5		5		2	16	1		25	5	5	73	
2002			1			4			5	1	6	5	1	22	2	2	29	1	2	76	
2003			1			4			5		7	3		25	1	1	31	9	2	87	
2004			1			4			5	1	2	10	5	3	33	1	1	33	4	5	96
2005	1		2		1	5			5	1	2	11		1	34	2		35	1		97
2006			2			5			5	2	2	13		5	39	1	2	38	12	6	115
2007			2	1		6			5		2	13	2	4	45	5	1	44	4	8	127
2008			2			6			5	2	2	15	4	1	50	4	2	50	12	9	148
2009	1		3	1		7			5	1	1	16	2	3	55	7	1	58	18	10	176
2010			3			7			5	1	1	17	2	3	60	2	1	61	4		180
2011	1		4		2	9	1		6	1	1	18	3	3	66	4		65	9	19	208
2012	1		5			9			6	2	1	21			66	9	2	76	3	8	219
2013	1		6			9	1		7	2	1	24			66	7	10	93	8	11	238
2014	1		7			9	2		9	4	1	29		1	67	8	3	104	16	17	271

Lomi (1995) has stated that the geographical environment affects the population dynamics of the organizations. Both the demands to resources and the level of getting resources affect the degree of interaction between organizations and populations. Additionally, heterogeneity and homogeneity within the populations have important effects on organizational founding rates. Lomi (1995) has underlined that indicating a homogeneous structure of the populations is related to their geographical distributions, and differences in founding rates in the populations with different homogeneity degree are originated from geographical distributions. Geographical location and density are important in terms of the evolution of the populations, forming their structures, and the competition.



**Graph 5: Populations Densities by Geographic Locations From 1976-2014**

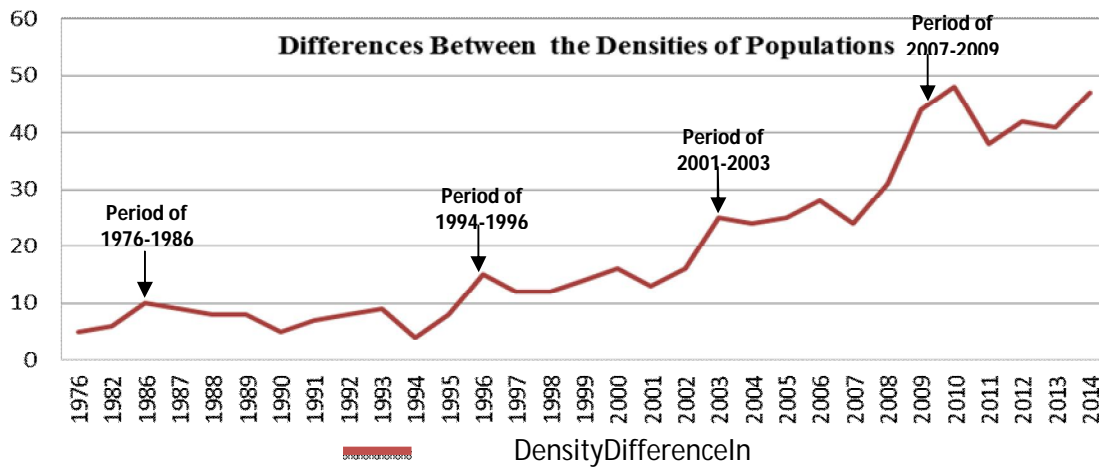
Considering populations on a regional basis, in the coastal regions, in parallel with the national tourism policy that is envisaging the development of mass tourism, tourism investors appear to prefer the Mediterranean and Aegean coasts in particular. After 1982, Antalya and also Muğla and Aydın provinces have hosted large-scale investments in mass tourism. Tourism centers, tourist areas, tourism regions and culture and tourism preservation and development regions that are identified by Tourism Encouragement Law have been the concentrated areas of tourism investments through incentives and land allocation. In the geographical distribution of tourism investments, in addition to the natural, historical and cultural attractions, forest and state ownership are extremely decisive. Indeed, after Antalya that has been focused for the mass tourism investments, Muğla and Aydın provinces have been the provinces where most of the forest land has been allocated to tourism. Beds certified by the ministry have been located in Antalya with 42%, while the Mediterranean region has 21,1% share (Kalkınma Bakanlığı, 2011). According to data from the Ministry of Culture and Tourism, the Mediterranean had been growing nearly three times between the years 2004-2014, and has been the region that has youngest bed capacity; while Aegean and Marmara regions are among the oldest. South-eastern Anatolia, Eastern Anatolia and the eastern Black Sea regions are among the most underdeveloped regions in terms of regional development. The occupancy rate of the accommodation facilities in the region remains below the average of Turkey in general. Tourism in the Eastern Black Sea Region provinces is usually for cultural tourism. Most of the tourism investments in this region are located in Rize and Trabzon (Künü et. al., 2015) with the reason that the most of the visited natural areas are located in these provinces. From these regions, the first five-star hotel was opened in 1994 in the Southeastern region, the second one was opened in 1995 in the Black Sea region, and the third one was opened in 2000 in eastern Anatolia region.

In terms of location site, Mediterranean region has had the highest numbers of hotels both in two populations. It is observed that the entry rates in Mediterranean region specifically after 1995 have been very high compared to other regions. Another point in the Graph-5, the number of independent hotels was always higher than the chain hotels' in Aegean region except the period of 2003-2005. The reason behind this point may be that the management teams of the chain hotels may have not been interested in the region because of not to operating at a full capacity throughout the year in this region.

*Patterns of The Difference Between the Densities of the Populations:* In Table 4, we present the differences in densities of the two populations. Examining the table and Graph-6 drawn by the help of this table shows that difference between the densities of two populations has been changing in favor of the chain hotel population within the determined periods. Following years of these periods, difference between densities of the two populations has decreased.

**Table 4: Differences between Densities of the Chain and Independent Hotel Populations**

YEARS	DENSITY (INDEPENDENT OTELS)	DENSITY(CHAIN OTELS)	DIFFERENCE
1976	2	7	5
1982	2	8	6
1986	3	13	10
1987	5	14	9
1988	7	15	8
1989	10	18	8
1990	15	20	5
1991	17	24	7
1992	21	29	8
1993	24	33	9
1994	27	37	10
1995	32	45	13
1996	35	55	20
1997	43	58	15
1998	47	62	15
1999	51	68	17
2000	53	72	19
2001	58	77	19
2002	65	85	20
2003	70	98	28
2004	81	108	27
2005	85	112	27
2006	96	124	28
2007	102	133	31
2008	113	149	36
2009	127	177	50
2010	136	187	51
2011	164	206	42
2012	180	223	43
2013	201	243	42
2014	223	273	50



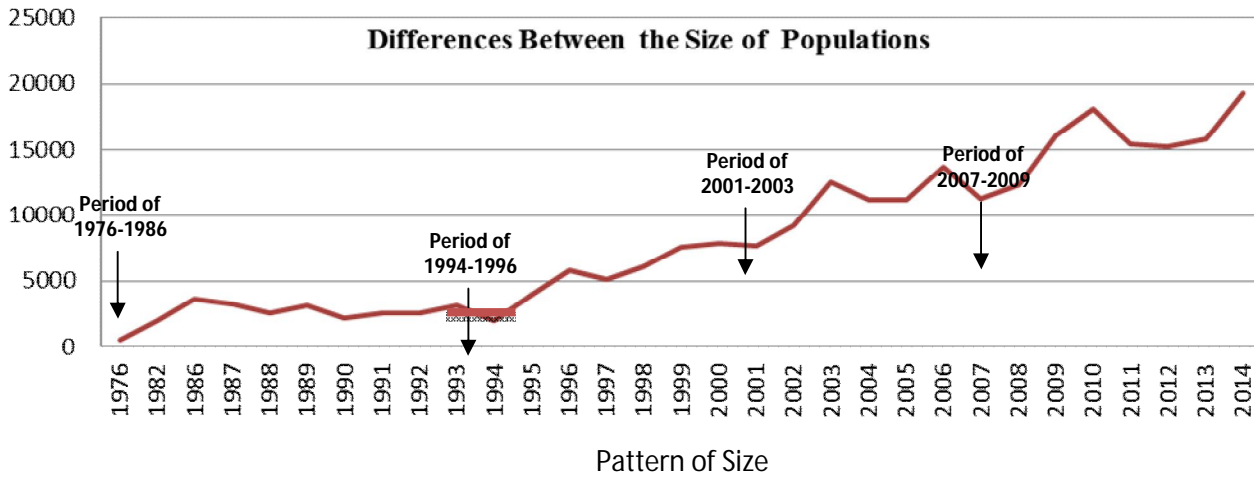
**Graph 6: Differences between the Densities of Populations From 1976-2014**

*Patterns of the Difference Between the Room Capacities of the Two Populations:*In Table 5 and in

Graph-7 that is prepared based on Table 5, size differences have been increasing in favor of the chain hotel population and sometimes indication a fluctuated pattern and these differences have had a high rate in the determined periods.

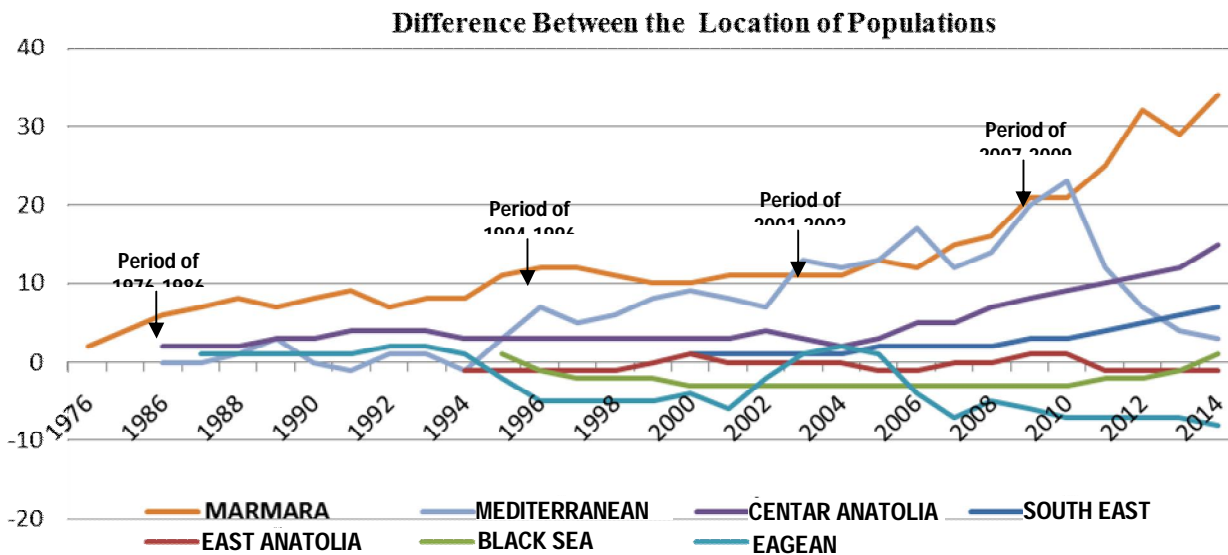
**Table-5: Size Differences Between the Populations of Chain and Independent Hotels**

YEARS	ROOM CAPACITY (INDEPENDENT HOTELS)	ROOM CAPACITY (CHAIN HOTELS)	DIFFERENCE
1976	597	1.125	528
1982	597	2.575	1.978
1986	597	4.239	3.642
1987	1.195	4.482	3.287
1988	2.215	4.792	2.577
1989	2.975	6.168	3.193
1990	4.620	6.832	2.212
1991	5.243	7.800	2.557
1992	6.592	9.184	2.592
1993	7.765	10.965	3.200
1994	8.946	10.965	2.019
1995	10.177	14.105	3.928
1996	12.215	18.005	5.790
1997	14.419	19.559	5.140
1998	15.404	21.522	6.118
1999	16.597	24.138	7.541
2000	17.050	24.925	7.875
2001	19.349	26.943	7.594
2002	20.829	29.974	9.145
2003	22.244	34.709	12.465
2004	26.248	37.431	11.183
2005	26.919	38.020	11.101
2006	30.810	44.516	13.706
2007	36.054	47.326	11.272
2008	40.311	52.661	12.350
2009	45.485	61.596	16.111
2010	46.483	64.572	18.089
2011	54.973	70.359	15.386
2012	59.441	74.647	15.206
2013	65.300	81.147	15.847
2014	71.045	90.275	19.230



**7: Differences between the Size of Populations From 1976-2014**  
*Difference Between The Number Of Chain Hotels And The Number Of Independent Hotels*

When the difference between the number of chain hotels and the number of independent hotels approaches to the zero point means that densities of two populations are equal. On the other hand, when the difference between the number of chain hotels and the number of independent hotels situates under the zero point means that density of independent hotels is more than the density of chain hotels. Within this context, the density of chain hotels in Marmara, Mediterranean, Center Anatolia, and East Anatolia regions have always been greater than the density of independent hotels have. The densities of the two populations are very close to each other in Southeast Anatolian region; the density of independent hotels in Aegean and Black Sea region has been greater than the density of chain hotels in those regions. Since 2011, however, this difference has been shifting (increasing) in favor of chain hotel population, and has become equal in 2014. In Aegean region, the difference between the density of chain hotels and the density of independent hotels has been gradually increasing since 2006.



**Graph 8: Difference Between The Locations Of Populations From 1976-2014**

**Table-6: Difference between the number of Chain Hotels and the number of Independent Hotels based on their Locations**

YEARS	EAST			SOUTHEAST			BLACK SEA			CENTER ANATOLIA			AEGEAN			MARMARA			MEDITERRANEAN		
	Density		Diff.	Density		Diff.	Density		Diff.	Density		Diff.	Density		Diff.	Density		Diff.	Density		Diff.
	C.	I.		C.	I.		C.	I.		C.	I.		C.	I.		C.	I.		C.	I.	
1976															2		2				
1982															4		4				
1986									2		2				6		6	1	1	0	
1987									2		2	1		1	7		7	2	2	0	
1988									2		2	1		1	8		8	3	2	1	
1989									3		3	1		1	8	1	7	5	2	3	
1990									3		3	1		1	10	2	8	6	6	0	
1991									4		4	2	1	1	11	2	9	6	7	-1	
1992									4		4	4	2	2	11	4	7	9	8	1	
1993									4		4	4	2	2	13	5	8	11	10	1	
1994				1	-1				4	1	3	4	3	1	13	5	8	11	12	-1	
1995				1	-1	1		1	4	1	3	4	6	-2	16	5	11	16	13	3	
1996				1	-1	1	2	-1	4	1	3	4	9	-5	17	5	12	22	15	7	
1997				1	-1	1	3	-2	4	1	3	4	9	-5	17	5	12	25	20	5	
1998				1	-1	1	3	-2	4	1	3	4	9	-5	17	6	11	29	23	6	
1999				1	1	0	1	3	-2	4	1	3	4	9	-5	17	7	10	34	26	8
2000	1		1	2	1	1	1	4	-3	4	1	3	5	9	-4	17	7	10	36	27	9
2001	1		1	2	2	0	1	4	-3	4	1	3	5	11	-6	18	7	11	40	32	8
2002	1		1	2	2	0	1	4	-3	5	1	4	10	12	-2	20	9	11	41	34	7
2003	1		1	2	2	0	1	4	-3	5	2	3	13	12	1	21	10	11	49	36	13
2004	1		1	2	2	0	1	4	-3	6	4	2	17	15	2	22	11	11	53	41	12
2005	2		2	2	3	-1	1	4	-3	7	4	3	17	16	1	24	11	13	54	41	13
2006	2		2	2	3	-1	1	4	-3	9	4	5	17	21	-4	25	13	12	64	47	17
2007	2		2	3	3	0	1	4	-3	9	4	5	18	25	-7	29	14	15	67	55	12
2008	2		2	3	3	0	1	4	-3	11	4	7	21	26	-5	32	16	16	77	63	14
2009	3		3	4	3	1	1	4	-3	12	4	8	23	29	-6	38	17	21	93	73	20
2010	3		3	4	3	1	1	4	-3	13	4	9	25	32	-7	39	18	21	96	73	23
2011	4		4	4	5	-1	2	4	-2	14	4	10	28	35	-7	43	18	25	104	92	12
2012	5		5	4	5	-1	2	4	-2	16	5	11	28	35	-7	52	20	32	107	100	7
2013	6		6	4	5	-1	3	4	-1	18	6	12	28	35	-7	59	30	29	115	111	4
2014	7		7	4	5	-1	5	4	1	22	7	15	28	36	-8	67	33	34	131	128	3

### 3. Discussion

In the study, we illustrate the pattern of the evolution of the two different populations: populations of chain hotels and independent hotels. To do this, we counted the number of these two types of hotels, the number of entries and room capacity of them in general and based on their location sites (geographic regions). This observation and examination of the two populations help us formulating exploratory hypotheses to be tested in future studies.

*Interactions Between Populations:* As discussed in above literature review part, Ingram and Baum (1997) have investigated chain affiliations in Manhattan hotels between 1898 and 1980, and emphasized the advantages and disadvantages of being affiliated to a chain. Chain affiliation is the source of operation knowledge and economies of scale, at the same time may bring strategic constraints. Additionally, a chain affiliation provides a chain member valuable resources, reputation, and market power. Thus, chain affiliation may also contribute to competitive strengths of the chain members.

Ingram and Baum (1997) have concluded that hotels with chain affiliation have lower failure rates than independent hotels since they learn faster than independent hotels and they have local experience than independent hotels by 'standardizing services, advertising, reservations, operating procedures, equipment and even buildings' (p.74). Taken together, organizations with linkages to their institutional environment and the advantage of declining cost curve by having affiliations with well-established organizations will have higher survival capacity than those of without such linkages and advantages. Returning to Graph-4, the difference between the densities of the two populations is in a rising trend except periodic fluctuations. And Graph-2 shows high entry rates into the chain population and a decrease in the density of the chain hotels' population and low entry rates into the population of independent hotels and a decrease in the density of the independent hotels' population in the determined periods. Thus we formulate:

**Hypothesis 1:** *The greater the density of chain hotels, the lower the founding rate of independent hotels.*

Whether a chain hotel or independent, hotels in Turkey appeal to similar niches. Their commensalistic relationships are based on partial competition because chain hotels have various competitive strengths such as operation knowledge, economies of scale, reputation, accession to resources, and market power. Thus, these attributes conserve them from the competition with independent hotels. Independent hotels suffer from the competition with chain hotels, with one exclusion: if the market is large enough for independent hotels (Ingram and Baum, 1997). According to Graph-6 and Table-4, density differences between populations increases in favor of chain hotels' population, and this means that the population density of the independent hotels decreases, and independent hotels' population has not any effect on the chain hotels' population. In Graph-1, it is seen that the density of chain hotels' population is on upward trend and that the density of independent hotels' population is on downward trend during crises periods. In post-crisis periods, while the density of independent hotels' population is on upward trend, the density of chain hotels' population follows a stable trend. We, therefore, expect that an increase in the density of independent hotels will not have any negative effect on the founding rate of chain hotels. Additionally, Graph-4 reveals that the population of chain hotels follows a stable trend while the population of independent hotels indicates a quick rise in the after-crisis periods. Thus, we formulate as follows:

**Hypothesis 2:** *The founding rate of chain hotels will not be affected by the increase in the density of the independent hotels.*

*Environmental Effects:* According to Baum (1996), one of the processes related to organizational founding and exit is environmental processes such as political turmoil, government arrangements, institutional variables composed of institutional linkages, and technological variables composed of technologic cycles. Baum (1996) has expressed that the evolution of organizational populations arises from the processes of variation-selection-retention- and competition. Variation process begins with the emergence of new organizational forms. Environment selects the organizational forms that respond to environmental changes successfully. Organizations that find a place for themselves in the population gain legitimacy. Organizations that stay behind the competition when competing for resources leave the population. As a result of this processes, a few organizations continue to their existence, i.e. retained by the environment. Although we found out positive effects of crises on the population of chain hotels by increasing their entry rates as illustrated in Graph-1, this may be an exception for the country's and the industry's context. Therefore, we hypothesized that:

**Hypothesis 3:** *Environmental turbulent that is experienced by organizations and has negative effects on them decrease the founding rates of the both populations (i.e. both chain hotels and independent hotels).*

*Ownership stats:* Although we did not observe the ownership status of the hotels in detail, we benefit from the literature while formulating hypothesis related to ownership status that may have an effect on the densities and founding rates of the two populations. The quick increase in the entries into the chain hotel population can be sourced by having foreign partnerships in the founding capital of these hotels. Management teams of chain hotels were able to make investments without being disturbed by the crises in the country. Domestic investors invest the independent hotels in general and thus, they have become open to be affected by crisis in the country. As discussed in above literature review part, Li's (2008) findings may indicate that the ownership status (international or domestic) of the organizations in a population may have an effect on the competitive interactions between them.



Independent hotels are mainly owned by domestic owners, therefore, we argue that chain hotels experience different competitive pressures based on their origin (foreign or domestic).

Thus, we hypothesized that:

**Hypothesis 4:** *The ownership status of hotels in chain hotel population (international chains and domestic chains) has effects on their population dynamics.*

#### 4. Conclusion

In this study of the interactions between five-star hotel populations that are among the deterministic dynamics of the tourism sector, populations of chain and independent hotels have been determined as the level of analysis. Both population groups that are studied have both advantages and disadvantages. The most important advantage that chain hotels have is having high cognitive legitimacy level. Chain hotels are affiliated with a chain, and this makes their partnership structure more powerful relative to independent hotels. They, therefore, have the ability to handle with a sudden turbulence such as crisis. Independent hotels, on the other hand, can determine their standards and locations because of their partnership structures. In this paper, two populations with different cognitive legitimacy levels have been studied. In the framework of the organizational ecology theory, it is observed that mutual dependency effect is more in the population of independent hotels than in the population of chain hotels. Therefore, as the theory underlined, the mutual dependency levels have effects on population dynamics. The level of interactions between populations is not only dependent on population dynamics but also dependent on environmental effects. The level of mutuality between chain and independent hotels depends on partial competition. According to our findings, it is observed when the density of the population of chain hotels reveals an increase above average, the entry rate of the population of independent hotels indicates a decrease.

It is also observed that a quick increase in the density of the population of independent hotels may have no effect on the entry rates of chain hotels. In terms of population dynamics, this may reveal the unidirectional interactions between populations (i.e. partial competition). Just by looking at either entry or exit rates into the population, it cannot be inferred that the density of population either will increase or decrease. Variation in the densities of the populations is related to the equilibrium between the entry and exit rates. If entry and exit rates into a population, the size of the population will follow a stable pattern. Increasing in the number of organizations in a population by causing competition among them for limited resources will have an increasing effect on exit rates, and a decreasing effect on entry rates. Exits that occur because of increasing density in a population are expected to be seen in newly born organizations (Hannan, 1991). Hannan (1991) put forward that entries into a population are directly proportional to the cognitive legitimacy, and inversely proportional to the intensity of the competition. Larger the size of the population, higher the entry rates, lower the exit rates.

When it comes to periodic effects especially based on crises, crises have a decreasing effect on the founding rates of independent hotels but an increasing effect on the population of chain hotels. This may be from the existence of external linkages of the chain hotels that help them reaching the knowledge easily. In terms of regional effects, it can be accepted that the low density of chain hotels in Aegean region may originate from not to operate throughout the year of the hotels in the region. On the other hand, the high density of the population of independent hotels in Black Sea region may imply that the local community assesses their lands and buildings as hotels because of the increasing rate of tourists come to this region. The differences of the encouragement amounts in developing regions such as East, Southeast, and Black Sea regions may have an effect on the differences between the densities of the two populations.

Based on density dependency theory, Carroll and Hannan (2000) have stated that the number of organizations is very few at the beginning, after a certain time it reaches its maximum capacities by indicating a sudden rise, then some organizations exit from the population, and fewer continue to live, at the last period, the number of organizations in the population become fixed and does not experience any significant change. If we are to move this view, because of the differences in the density of the population exhibits across the country, if we are to move this view, because of the differences in the density of the population exhibits across the country. Committing to this view, because the densities of the populations across the country differ, they should be examined on a regional basis.

Especially Mediterranean and Marmara regions are in a rising period compared to Aegean region, and it will not be wrong to say that other regions are in the initial phase. Population of the chain hotels that has cognitive level of legitimacy seems to be decisive in the rising pattern. The findings of this study can be a fruitful input to the tourism sector. Modeling with the coverage of the hotels that target different sets of resource can be very beneficial when they are used as a decision support system by the investors. Based on our findings and evidence from the literature, we developed exploratory hypotheses that could be validated in future empirical studies. There is a need to extend the inquiry in this area to the other countries outside North America and Western Europe. With these future studies, the research in this area may have universal validity and provide a measure of generalization.

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