

# A Structural Analysis of the Turkish Hospital Industry Using Porter's Diamond Framework: A Case from an Emerging Market

*Porter'in Elmas Modeli ile Türk Hastanecilik Sektörünün Yapısal Analizi: Gelişmekte olan Piyasadan Bir Vaka*

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## ABSTRACT

This study applies Porter's diamond framework to the Turkish Hospital industry, in an attempt to explicate the sources of international competitive advantage. The main objective is to provide insights into the competitive structure of the Turkish Hospital Industry and assess whether the framework can be applied to a developing country setting. A detailed case study of the Turkish hospital industry has been conducted with an examination of secondary data from publications of prestigious consultancy firms and national and international reports, and field interviews with four company executives from the hospitals most preferred by foreign patients and two industry association representatives from private insurance and medical device industries (related/supporting industries). The results are generally supportive of Porter (1990); meaning that the Turkish hospital industry exhibits the characteristics proposed by the diamond framework for a country at an investment-driven stage. In brief, Turkey enjoys high technology, modern facilities, well-trained relatively low-paid medical staff, favorable air transportation and strong government support but lacks the satisfactorily sophisticated home demand, advanced support and related industries.

**Key words:** International competitiveness, Diamond framework, Turkey, Hospital Industry

## ÖZET

Bu çalışma, Porter'ın elmas modelini Türk Hastane endüstrisine uygulayarak, endüstrinin uluslararası rekabet avantajı kaynaklarını açıklamaktadır. Çalışmanın amacı, Türk Hastane Sektörünün rekabetçi yapısını anlamak ve elmas modelinin gelişmekte olan ülkelere uygulanabilir olup olmadığını değerlendirmektir. Bu çalışmada yapılan Türk hastane endüstrisine ilişkin ayrıntılı vaka incelemesi, saygın danışmanlık firmalarının yayınlarından ve ulusal ve uluslararası raporlardan elde edilen ikincil verilerin ve sektör temsilcileriyle yapılan mülakatların analizi ile gerçekleştirilmiştir. Sonuçlar genellikle Porter'ın modelini desteklemektedir. Şöyle ki, Türk hastane endüstrisi, yatırım-odaklı seviyede bulunan bir ülkenin elmas modeline ait karakteristikleri göstermektedir. Kısacası, Türkiye; yüksek teknoloji, modern tesisler, iyi eğitim almış nispeten düşük ücretli sağlık personeli, uygun hava taşımacılığı ve güçlü hükümet desteğinden yararlanırken tatmin edici derecede sofistike ulusal talepten ve gelişmiş destek endüstrilerinden yoksundur.

**Anahtar Kelimeler:** Uluslararası rekabet, Elmas Modeli, Türkiye, Hastanecilik Sektörü

## INTRODUCTION

According to World Health Statistics of the World Health Organization, the global average of *per capita* total expenditure on health (PPP int. \$) rose from 607 in 2000 to 1276 in 2014, which means that in a short period of time the money supply allocated for health

increased considerably. Actually, the common reason for the rise may be attributed to increased longevity and aging populations. According to data on human longevity provided by the World Health Organization, global life expectancy increased considerably between 2000 and 2015. Norton (2000) states that longevity will

lead to higher health care expenditure. In summary, this means more demand for healthcare services, more investment in medical devices and the pharmaceutical industry. Furthermore, individuals around the world try to meet this need by accessing cheaper and more qualified health services. For Western countries in particular, the high cost of healthcare becomes a major problem; hence, an increasing number of people are searching for ways to reduce their expenditure on health by purchasing some services from foreign providers, namely through medical tourism or health related travel.

Taking the potential development of the healthcare service industry into consideration, the following question is asked, "How much does Turkey contribute to meeting the needs of all individuals around the world in terms of healthcare services?" Based on this initial question, this study investigates the competitive position of the Turkish Hospital Industry in the international market and the underlying factors leading to this position. In this study, Michael Porter's Diamond framework has been employed for the analysis of the industry.

The framework has faced considerable criticism in the academic literature. One of the main disputes about it is the "suitability of the model for every country" (Öz, 1999). The majority of the nations studied by Porter (1990) are developed countries (Öz, 2002) and moreover, the large number of industries regarded as having a competitive advantage in Porter's study (1990) produces manufactured goods. In point of fact, Porter (1990, p. 239) states, "Most discussions of national competitive advantage are preoccupied with manufacturing." Porter (1990, p. 240) also mentions that, "Little is known about international competition in services." Actually, Öz (1999) conducted an extensive study to investigate the competitive advantage of Turkey; however, all the competitive industries are in manufacturing. A further contribution of this study is to assess the diamond framework in a developing country setting for a service industry. The same determinants of the diamond framework in manufacturing are taken into account for service industries, to assess national competitive advantage (Porter, 1990).

Porter (1990, p. 744) uses world export shares as a measure of international competitiveness for manufacturing industries. Nevertheless, he does not define an exact measure of national competitiveness for service industries. Instead, he benefits from many sources including, available government statistics,

published articles, and extensive field interviews. In this study, Health-related export USD in absolute values is used as the measure of international competitiveness, as healthcare services are characterized with the *mobile buyer* type of international service competition (Porter, 1990, p. 248). Mobile buyers travel to other countries to take health services because they are differentiated or cost less than the services at home, even though travel costs are considered (Porter, 1990, p. 248), which are reasons for preferring Turkey for the consumption of health services. Health-related exports occur when domestic providers supply medical services to non-residents (Health at a Glance, OECD, 2013). Briefly, the notion of mobile buyers corresponds to the notion of health-related exports (medical tourism), as far as competitive advantage in international terms is concerned. Based on the OECD data, Health-related exports (USD) are calculated in absolute values on a country basis (See Table 1). In absolute values, Turkey reported health-related exports of around USD 705 million and ranks third among OECD countries. This proves that Turkey has a national competitive advantage in the Hospital Industry.

**Table 1:** Health Related Exports (USD)

	Share of total spending on health (%)	Real annual average growth rate (%)	Health Related Exports in absolute terms
United States	0.12	4.4	3028923989.2
Czech Republic	3.60	5.9	760948318.5
Turkey	0.98	8.2	704395812.0
Poland	1.15	19.4	622769122.0
France	0.23	2.2	595194372.8
Mexico	0.48	-1.5	532411525.1
United Kingdom	0.13	10.8	247899687.6
Italy	0.12	-3.6	222576496.4
Hungary	1.10	10.2	189799577.1
Korea	0.19	19.0	188327437.4
Austria	0.37	10.7	135275980.8
Canada	0.08	1.8	118681674.8
Sweden	0.24	8.4	105004177.4
Slovenia	1.49	20.3	75037028.2
Slovak Republic	0.65	12.1	66670473.4
Israel	0.36	18.0	59577253.6
Luxembourg	1.85	10.2	54652843.0
Greece	0.19	-2.9	51705034.1
Estonia	0.83	14.6	15663372.2
New Zealand	0.06	-2.8	8709948.4

Note: Health-related exports occur when domestic providers supply medical services to non-residents

Note: Health Related Exports in absolute terms is calculated as a product of health-related exports a share of health expenditure, health expenditure as a share GDP and GDP.

Source: OECD-Health at a Glance 2013 and OECD database

### The Diamond Model and Related Literature

In order to understand underlying reasons for a nation's success in particular industries, in his book entitled, "Competitive Advantage of Nations", Michael Porter (1990) proposed the diamond model, which rests on four "determinants" and two external variables: chance and government. In his model, these four determinants and two exogenous variables interact with each other and functioning as a system, and the influence of one factor often depends on the state of the others. These four determinants are factor conditions, demand conditions, related and supporting industries and firm strategy, structure and rivalry.

*Factor conditions* are related to productions, involving natural resources and created factors, such as infrastructure and skilled labor. According to the model, a factor must be specialized to the particular needs of an industry in order to create competitive advantage, such as a scientific institute specialized in optics, a pool of venture capital to fund software companies (Porter, 1990, p. 73). Moreover, the model states that when companies encounter a factor disadvantage, they convert this disadvantage into competitive advantage if there are favorable circumstances in almost all determinants.

*Demand conditions* are defined as the degree of sophisticated customers. The framework proposes that when home demand serves as an early-warning system for emerging customer needs and forces to companies to upgrade themselves to supply more qualified service and products, then companies gain competitive advantage over their foreign rivals.

*Related and supporting industries* refer to the presence and absence of internationally competitive related and supporting industries. Internationally competitive home-based suppliers provide inputs in a way that companies benefit from cost-effectiveness, and the early and rapid supply of materials. Also, more importantly, the close working relationship with these competitive related and supporting industries enables innovation and upgrading through easy communication, and the quick and constant flow of information and ideas.

*Firm strategy, structure and rivalry* refer to the degree of domestic rivalry, and the ways in which companies are created, managed and organized. According to Porter (1990, p. 108), there is no one managerial system that leads to the competitive advantage. He asserts that nations compete successfully in some

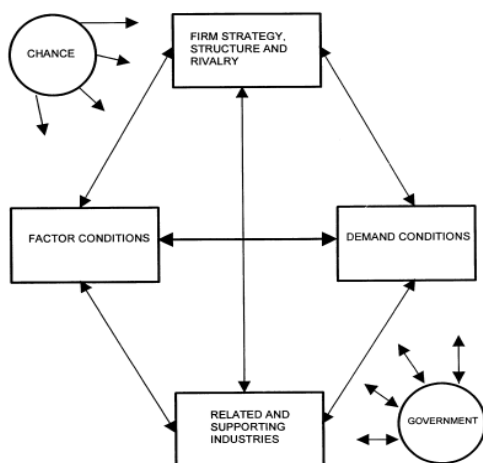
industries when managerial approaches, strategies, goals and the structure of organizations shaped by the national environment best suit the dynamics and specific needs of these industries. Porter regards the national environment as an influence on the ways in which firms are organized and managed. The national environment includes attitudes toward authority, norms of interpersonal interaction, the attitudes of workers toward management and *vice versa*, social norms of individualistic or group behaviors, and professional standards formed by the educational system, social and religious history, family structures, and many other often intangible but unique national conditions. The presence of domestic rivalry is defined as a stimulus to the creation of competitive advantage. Local rivals force each other to upgrade themselves, in terms of enhancing quality and developing new products and processes. There is competition among domestic rivals, not only for market share but also for human capital and technological advancements.

In his book, Porter (1990, p. 127) states that *government* can impact, either positively or negatively, on the four determinants. Government should create an environment in which companies can acquire a competitive advantage by developing mechanisms for specialized factors, setting strict regulations and standards and putting pressure on firms for adoption of those and conducting a trade policy, enabling firms to access to open markets in every foreign nation. Incidentally, government should not directly affect factor and currency markets and should rather leave everything to market forces.

*Chance factors* are considered uncontrollable events that influence the industry and lead to relative position changes in the competitive environment. Some examples are major technological discontinuities, discontinuities in input costs, such as oil shocks, significant shifts in world financial markets or exchange rates, political decisions by foreign governments, wars and disasters.

The framework actually functions as a *system* (see Graph 1), including reinforcing relationships among elements. One determinant influences the state of the others. In particular, an unfavorable determinant limits advantageous conditions in other determinants. Therefore, competitive advantage depends on the whole system not on only on one determinant. The systematic nature of the diamond model makes it difficult for the other countries to imitate the competitiveness of a nation. As the result

of Porter's study (1990, pp. 143,157), it is figured out that domestic rivalry and geographic proximity strengthen the systematic nature of the framework, since domestic rivalry boosts favorable conditions in all other determinants and geographic concentration intensifies the interaction among the four elements.



**Graph 1:** The Diamond Framework

Source: Porter, *The Competitive Advantage of Nations*, 1990, p. 127

Even though Porter's diamond model received wide recognition, there are also some *criticisms*. The debate about the diamond model is classified by Öz (1999) into three broad titles: General criticisms (Formal Modeling, Originality, Suitability for every country, the role of macroeconomic policy and the role of National Culture); Criticisms about the Methodology (Generalizability, the measure of international competitiveness, the choice of industries, the geographical unit of analysis, the predictive power of the diamond); Criticisms about the Determinants of the diamond. In addition to criticisms about the model, there are noteworthy improvement proposals. Rugman and D'Cruz, (1993) published one of the most prominent studies, which focuses on enhancing the diamond model. The authors asserted that the diamond model lacks understanding of the nature of two-way FDI. Analyzing the model in the context of Canada, where most of the trade was conducted by multinationals, the study reached the conclusion that a double diamond model, which associates the US diamond model with that of the Canadian diamond because of economic strong relations, is much more suitable for Canada. Dunning (1992)'s study also makes some criticisms of the diamond model and proposed the multinational activity as a third outside variable.

In the literature, an application of the diamond model to the hospital industry or medical tourism has not yet been completely researched. One study has been conducted by Enderwick & Nagar (2011) analyzing cases of medical tourism in four emerging economies: Thailand, Malaysia, India and Singapore. The authors assess the cases, drawing on Porter's Diamond Model. Conclusions and observations revealed by the study are noteworthy. As far as factor conditions are concerned, emerging countries use the advantage of a considerable number of highly qualified doctors and nurses. Furthermore, labor cost is also relatively less compared with western countries. The analysis of related and supporting industries shows that in these emerging countries medical tourism mainly relies on transportation, education and training tourism industries. In terms of strategy, healthcare providers set targets for the purpose of increasing credibility. Therefore, holding international medical accreditation and establishing hospital affiliation with world-class institutions in the developed world are strategies adopted by health organizations in Thailand, Malaysia, India and Singapore. Utilization of the most advanced technology and the publication of physicians' credentials are other observable strategies. The aim of these strategies is to convince customers that they will experience high quality. As far as the country setting (in which the diamond model is assessed) is concerned, the application of the diamond framework to Turkey was first conducted by Öz (1999). The author examined glass, construction, and leather clothes, automobile and flat steel industries. The results of the study revealed that the diamond framework generally works well in a developing country setting.

### Methodology

In addition to secondary data from publications, by prestigious consultancy firms and national and international reports, field interviews were conducted between 2013 and 2014 with four company executives from different hospitals, who are responsible for medical tourism operations, and an academician working on healthcare management. Interviews with representatives from medical device and private insurance industries have also been carried out, so as to clarify the relationships between related/supporting industries and the hospital industry. The selection of cases (hospitals) depends on "theoretical sampling." The aim of the theoretical sampling is to select cases that replicate or extend the theory (Eisenhardt, 1989). Since the diamond model assesses the sources

of international competition, the most successful hospitals serving foreign patients are chosen from the list provided in Evaluation Report on Medical Tourism in Turkey (2013). The determination of the number of the interviews is based on Eisenhardt (1989)'s study, which proposes that having a minimum of four cases is required to generate a theory. Moreover, Eisenhardt (1989) suggests stopping adding cases once theoretical saturation is reached. During the study, theoretical saturation was achieved with the cases included in the study. Consequently, the sample of the cases is adequate for conducting the study.

Generalizability is a primary issue. However, the main logic in multiple case study research is replication, not statistical sampling. In replication logic, it is accepted that cases confirm emergent relationships and that as a result, drawing generalizations from case studies is appropriate (Eisenhardt, 1989; Yin, 1994). Öz (2002) mentions that conducting additional replications in other developing countries is required to discuss the generalizability of the results obtained from the selected Turkish Industry cases. Therefore, in the latter parts of this study, the common patterns between the case of the Turkish Hospital Industry and the cases analyzed in Enderwick & Nagar (2011)'s study will be discussed.

Eisenhardt (1989) suggests analyzing "within-case data", and then searching for "cross-case patterns" in order to obtain generalized patterns, namely findings. Within-case analysis includes detailed case study write-ups for each site. In this study, each interview is approached as a site (or case) and, transcribed interview data and secondary data (publications of prestigious consultancy firms and national and international reports) constitute the write-ups for analysis of "within-case data process". This process enables a researcher to figure out unique patterns of each case which emerge before the researcher draws generalized patterns across cases (Eisenhardt, 1989). Eisenhardt (1989) suggests three tactics for good cross-case comparison. The most suitable one for the current study is to select categories and then to search look for within-group similarities coupled with intergroup differences. As suggested by Eisenhardt (1989), categories were selected as suggested by existing literature. Each element in the diamond model was used as one category. During the analysis, each remark related to each category was listed. Subsequently, the most occurred remarks were selected, and then they were assessed according to whether they were

supported by the secondary data. Accordingly, the final conclusions related to each category were achieved.

To illustrate the patterns of national advantage of a nation, Porter (1990, pp. 739-744) uses a cluster chart, including various broad industries. Based on vertical relationships, the chart has three levels: upstream sectors (top level); industrial and supporting functions (mid-level); final consumptions goods and services (bottom level). Each broad industry includes subsectors; primary goods, machinery (and other equipment) used in making them, specialized inputs to the goods and services associated with the goods or their production. Each broad sector represents a national cluster, including various vertical relationships among internationally successful industries. Moreover, there may be linkages among broad sectors. Therefore, the cluster chart is employed because of its usefulness in determining related and supporting industries. In the cluster chart, healthcare is defined as a cluster at bottom level. The interview questions about the related and supporting industries are prepared according to this tentative cluster chart.

### Case Study Findings

#### Factor Conditions

In his book, Porter (1990, p. 248) defines three types of international service competition. First, mobile buyers travel to a nation to have services performed. Second, firms from one nation provide services in another nation using domestically based personnel and facilities. Lastly, a nation's firms provide services in other countries via foreign services locations, staffed with either expatriates or local nationals. Mobile buyers travel to a country in order to benefit from services that are differentiated and cost less, even including the cost of transportation, when compared with services in their own or other countries. According to Porter (1990, p. 256), factor conditions appear to be more decisive in international service competition, as far as Type 1 is concerned. He (Porter, 1990, p. 257) states that international success in health services principally relies on the training and skill of local professional and technical personnel, while semi-skilled and unskilled labor cost at home is not important for competitive advantage. According to interviews, the international success of the Turkish Hospital Industry mainly depends on medical personnel (including physicians, nurses and technicians) that are very capable of conducting specialized medical operations. In Turkey, there are successful, well-educated physicians who

are dexterously advanced, and who always follow innovations and have considerable working experience abroad and speak foreign languages. Turkish physicians go to the best medical centers abroad for educational purposes and have close working relationships with these centers. Subsequently, they transfer their accumulated knowledge to medical students in Turkey. Each of these capabilities enables them to treat complex and difficult medical cases. This point is very important for the interviewees as, according to them, medical buyers travel to a country only for advanced specialisms. This is the case in Turkey. The study shows that customers prefer Turkey, mostly for its quality of service and easy access to services. Moreover, compared with other countries, the cost of having medical services in Turkey is considerably lower for foreign buyers. The data on Surgery Cost (USD) on country basis provided by the Ministry of Health (Deloitte, 2014, p. 74) supports the findings obtained in the interview. The data clearly shows that major surgeries are conducted relatively cheaper in Turkey compared to USA, India, Thailand, Singapore and Malaysia. Briefly, the cost and quality advantages of the Turkish Healthcare Sector validate Porter's findings (1990, p. 248) with regard to the reasons for medical travel. However, interviewees have drawn attention to Turkey's emerging scarcity of physicians and nurses. According to the OECD Health at a Glance 2013 Report, Turkey lags far behind the OECD average, in terms of the number of doctors and nurses and also the number of medical school and nursing graduates (OECD, 2013, pp. 64-81). Moreover, the interview results show that the Turkish Hospital Industry does not enjoy the low labor cost, as in order to be able to compete internationally, a hospital has to hire the best doctors and qualified nurses and technicians, who demand high wages. In addition to the quality of medical staff, the interviewees stated that they benefit from qualified administrative personnel, who graduated from the management programs of prestigious universities. Moreover, they added that since the young population is higher compared with Europe, they are able to find employees who can tolerate very long working hours. They said that for a service industry, the nature of the business requires long working hours. In Germany, people do not work under these conditions.

Porter (1990, p. 257) also pays attention to the ability of easily interacting with many different cultures for international service competition. The interviews validate this argument as well. Turkey has a great advantage in this respect, since Turkish Hospitality is

very famous, and Turkey has an innate approach to hospitality stemming from many years of experience in the tourism sector. Foreign patients are impressed by the affinity of the medical personnel. Actually, this is a sector specific factor. Customers having healthcare services tend to expect more close care when compared with customers utilizing other services, since patients are in weak psychological condition and need emotional support. Therefore, the close relationship with customers is so vital and decisive in success.

Furthermore, Porter (1990, p. 257) highlighted the significance of the language skills of a nation's citizens for effective communication with foreign buyers and interviewees also emphasized the requirement of advanced language skills for many reasons, including providing communication between doctor and patient and preparing reports for foreign insurance companies. They said that it is most essential to have personnel (medical and administrative) who can speak and write well in many different languages; however, the language ability of personnel is not at a satisfactory level and this condition creates a disadvantage for Turkey. Nurses, in particular, must be able to communicate in foreign languages.

The transportation infrastructure of Turkey is another factor condition defined by interviewees. If a country is not favorable in terms of airline and/or other transportation infrastructure, foreign patients will not wish to obtain services from that nation. According to World Economic Forum (The Global Competitiveness Report 2013-2014, p. 372), Turkey is at a high level in terms of transportation infrastructure. Moreover, Turkey has a geographical advantage, such that many airlines companies select it as flight destination. The expediency of air transport in Turkey enables inexpensive travel to the country (Erdoğan & Yılmaz, 2012).

As far as capital is concerned, the Turkish Hospital Industry enjoys foreign capital inflow. Interviewees attribute this condition to the lucrative market environment of the Turkish Hospital Industry. Foreign investors, through strategic investments and private equity funds, provide capital to Turkish Hospital Market. The capital strength of the Turkish Hospital Industry contributes greatly to the acquisition of sophisticated and state-of-the-art medical technologies, expansion of infrastructure, large-scale marketing activities and the employment of the most successful doctors. Briefly, it can be inferred that the industry can generate the necessary capital factor

and in this way it can ensure other important factors (technology, high-skilled personnel, world-wide marketing) specific to the industry. When the existence of high quality infrastructure (for example, operating theatres, air conditioning systems, sterilization and technical equipment) combines with highly qualified staff, then foreign patients prefer Turkey. Actually, all the interviewees highlighted that having the technology is not the main point; the more important is the presence of capable doctors who can utilize this technology efficiently. The Gulf Countries can afford to buy these technologies; however, they face the problem of the inefficient use of the technology, since they lack competent physicians. Additionally, the interviewees draw attention to the construction of hospital facilities. They firmly state that hospital buildings must be designed and constructed taking into consideration the requirements of the healthcare services. Also, maintenance of the facilities must be carried out regularly. The Turkish Hospital Industry fully satisfies these two industry specific conditions.

As well as advantages, Turkey also faces some factor disadvantages. The most significant of these is inadequate research and development activities. The interviewees noted that novel clinical invention is vital in medical tourism since these kinds of developments boost a nation's recognition. For example, Singapore was the first country to successfully conduct an operation involving the splitting of conjoined twins, which led to Singapore being a medical destination. Unfortunately, interviewees find Turkey deficient in terms of clinical research but consider that, should Turkey invest more in clinical research, the country will create a major competitive advantage. According to the Healthcare Industry in Turkey Report published by Deloitte (2014), Turkey is ranked 35th in the world and 19th in Europe, in terms of the number of clinical research studies conducted in 2013.

Another disadvantage is the shortage of doctors and nurses. This situation can be called "selective disadvantage." Porter (1990, p. 81) reported that when firms experience a selective disadvantage, like labor shortages, or the lack of local raw materials, they must innovate and upgrade to gain a competitive advantage. In recent years, it has been seen that some major hospitals have established medical, nursery and health management schools. It is anticipated that the establishment of medical schools will be a remedy for both shortage of personnel and inadequate clinical research.

## Demand Conditions

Sophisticated homebuyers train service firms, in terms of improving service quality and introducing new services, which are then demanded by foreign customers (Porter, 1990, p 86). The interviews show that Turkish customers compel hospitals to upgrade. They have certainly contributed to the international success of Turkish Hospitals by demanding better services. Since access to information is so straightforward, domestic buyers challenge physicians and healthcare corporations by comparing many healthcare suppliers. The interviewees acknowledged that there is a sophisticated demand structure in Turkey, which makes them well prepared to successfully meet the needs of foreign customers. They indicated that Turkish hospitals replicate the experience gained from domestic customers to their foreign customers. Moreover, Turkish customers act as an early-warning system, enabling firms to predict the needs of foreign patients. Turkish patients specifically demand "friendliness, humanistic attitudes, respect, two-way communication." Healthcare providers are therefore required to respond to the patients' questions, provide alternatives and help patients to decide. Foreign patients are impressed when they experience this kind of treatment in Turkey and consequently favor Turkish hospitals. Turkish customers also expect hospitals to supply high-quality hotel services in addition to medical services. This enables Turkish hospitals to replicate the experience they gained from providing qualified hotel services, combined with medical services. There is a two-way relationship between customers and hospitals. As I stated above, customers compel healthcare providers to supply better services. On the hand, because of intense rivalry among hospitals, patients are conditioned to expect better and better services. Porter (1990, p. 144) says that *intense domestic rivalry among domestic firms has a strong spillover effect on other diamond determinants. Intense rivalry in the Turkish Hospital Industry has contributed to the sophistication of domestic demand.*

One of the thought-provoking results of this study is that the Turkish government has shaped the demand structure of Turkish customers by upgrading the service quality of public hospitals. According to TÜİK's Life Satisfaction Survey (TÜİK, 2013), satisfaction with public healthcare services increased from 39.5% in 2003 to 74.7% in 2013. Services provided by private hospitals are expected to be at least as qualified as those provided by public hospitals. In brief, the government and the industry have raised the quality

standard expected by customers, who now vigorously demand high-level healthcare services. This condition perfectly suits the demand characteristics of the investment-driven stage defined by Porter (1990, p. 549). During this stage, “supply push rather than demand pull” is observed as in the case of the Turkish hospital industry.

Deloitte defines the “increasing population, ageing population, higher incidence of chronic diseases, wider health insurance coverage (the universal coverage system), increasing economic welfare and changing disease profile in Turkey” as the main drivers of the growing domestic demand that results in an increase in healthcare spending (Healthcare Industry in Turkey Report, Deloitte, 2014, p. 72). Percentage of the population who has social security has increased 29% from 2002 to 2012 (Deloitte, 2014, p. 26). Further, the Ministry of health has enabled people with state social insurance to benefit from the services of private hospitals (from 2005) by paying a little extra. This application and the considerable increase in the number of citizens under the universal coverage system results in increasing demand for private health services, which makes the industry very attractive for capital investors and new entries (Karakaş & Yılmaz, 2011). In sum, government policies (health insurance coverage system and privatization), the increasing need for health services (because of increasing population, and ageing population), and increasing economic welfare (enables out of pocket payments) boost the scale of the demand, which then affects rivalry (new entries) and factor conditions (capital). This situation is a good example of the diamond functioning as a system.

#### Related and Supporting Industries

Drawing on the interviews, the most significant related and supporting industries to the Turkish Hospital Industries are tourism, medical devices, pharmaceuticals, transportation and private insurance.

The interviewees clearly stated that the tourism sector has greatly contributed to Turkish Hospital Industry in two ways. First, medical tourism covers all business activities related to tourism as a matter of course. Long years of tourism experience have resulted in Turkey becoming specialized and competent in the service industry, including catering and hotel services. Turkey has enjoyed replicating its advanced experience gained from the tourism industry in medical tourism. Secondly, according to United Nations World Tourism Organization data, Turkey ranks 6<sup>th</sup> in terms of

international tourism arrivals and Turkey’s recognition as a high-quality tourism destination (UNWTO Tourism Highlights, 2013, p. 6). It is easier to persuade a customer who has been to Turkey for touristic purpose to buy health services from Turkey.

As far as the transportation industry is concerned, the interviewees stated that the success of Turkish Airlines has had a positive influence on the recognition of Turkey. Turkish Airlines is the best airline in Europe and the seventh airline in the world (Skytrax World Airline Awards, 2012). Moreover, the availability of airline transport makes travel to Turkey for medical tourists easier and more affordable (Erdoğan and Yılmaz, 2012). Furthermore, Turkey’s airline companies supply support packets, including special discounts and incentives, to organizations operating in the medical tourism sector in Turkey, providing flexible flights at no extra cost.

Limited growth in the Turkish Insurance sector constrains the expansion of the Turkish Hospital sector. Customers do not like paying from their own pockets for private healthcare services since it costs them much more. Therefore, to benefit from private health services private insurance is favored. In fact, private hospitals generate most of their revenue from privately insured customers. The interviewees accurately acknowledged that Private Insurance companies contributed to the development of hospital industry by providing customers with affordable insurance policies. The insurance sector is one of the most vital revenue channels of the hospital industry and, in this way contributed and indirectly affected the industry’s international success. However, the insurance sector in Turkey is making very slow progress and lags behind the expansion of the hospital industry. Thus, it needs to improve considerably. According to the report by the Republic of Turkey Prime Ministry Undersecretariat of Treasury Insurance Supervision Board (2012), the number of people covered by private health insurance is about 3 million, a figure that comprises approximately 4% of the population. A representative of Turkish Private Insurance Sector remarked that there is no Turkish Multinational Insurance Company since the sector does not have the necessary strength to compete abroad. He said that some Turkish Companies had attempted to expand into foreign markets, but they failed and added that in the country’s domestic market it is mainly foreign firms that operate. One of the most interesting results obtained in this study is that with the help of physicians working with them,



Turkish insurance companies have applied strict controls to invoices sent by private hospitals and have not paid everything. As a result, Turkish Hospitals are directed to medical tourism to generate revenue. *It can be implied that the supporting sector influenced the firms' strategy. Additionally, the interviewees highlighted that the Turkish Hospital industry raised the standards of the sector, and the insurance sector tried to adapt itself to these standards. The hospital industry triggered the insurance sector and the sector responded to new developments in the sector. In brief, the growing sector affects the development of the supporting sector. The Insurance sector and the hospital sector have nurtured each during the last decade. However, it should be taken into account that the majority of insurance companies are multinationals.* To sum up, the Private Insurance industry limits the progress of the Turkish Hospital Industry. If the insurance sector increases the number of people covered by private insurance and direct premiums, there is high revenue potential for the hospital industry. I also observed that some companies, like the Acibadem Hospital Group and the Anadolu Health Group have diversified into a related industry, insurance. Porter (1990, p. 263) says that established service firms gain the advantages of systematization when they enter into related industries. The next step for these firms is to gain international competitive advantage through expanding abroad.

The Medical Device Sector in Turkey has no international position either. The sector has not reached a satisfactory research and production level (Özer et al., 2016). Most of the production bases on assembly rather than R&D activities (Ankara Sanayi Odası, 2014). Since R&D activities are insufficient, domestic demand is largely met through import (Arık et al., 2016). All sophisticated devices are supplied from foreign firms like Siemens, General Electrics, and Philips. Domestically, only medical consumables and semi-sophisticated devices are produced. Domestic products are more qualified and cheaper, enabling hospitals to reduce expenditure. However, medical consumables and semi-sophisticated devices sectors in Turkey appear to be non-competitive internationally, based on Porter's basic measure of international competitiveness. Turkey's cut-off rate is 1.428% in 2013 (UN Comtrade database). The world export share of Medical consumables and semi-sophisticated devices is 0.97% (UN Comtrade database). Based on an interview conducted with a representative of the medical device sector, it can be stated that the domestic medical device sector contributed to the development of the

hospital industry in terms of quality, price and logistics. The representative suggests that the sophisticated medical device industry can be improved only if the Turkish government invites major international firms like Siemens to enter into partnerships with domestic firms. These corporations may initially import the components, but gradually domestic component producers can start to support the medical device industry. This is the only way for the medical device sector to develop since local firms have not enough capacity to invest in R&D and produce sophisticated devices. He also pointed out that growth, changed structure and increased investment in the hospital sector has accelerated the medical device sector in Turkey. *This situation is assessed to be the influence of market dynamics on the supporting sector.* Finally, he drew attention to the necessity of collaboration among universities, the hospital industry and the medical device industry, in terms of developing innovative products. Only then will the medical devices sector develop. Investing too little in R&D and suppliers relations causes disadvantage in global competition (Porter, 1992). Therefore, developing collaboration with medical device industry in terms of R&D project will increase performance of the hospital industry in global competition. Additionally, the government should set strict regulations to create fair competition environment (TOBB, 2009).

Porter's basic measure of international competitiveness suggests that the pharmaceutical industry in Turkey is not internationally competitive. The world export share of the pharmaceutical industry in Turkey in 2013 was 0.193% (UN Comtrade database), below Turkey's cut-off rate. Moreover, slow access to innovative and sophisticated medicine appears as a risk and a disadvantage for the high potential of medical tourism in Turkey (Deloitte, Türkiye Sağlık Sektörü Raporu, 2012).

#### Firm Strategy, Structure, and Rivalry

Although there is common view that consolidation provides bargaining power, the quality and efficiency gains from consolidation in healthcare industry is very limited (Porter & Teisberg, 2004). Therefore, competition is an essential element for the progress. The interviewees acknowledged that there is intense rivalry in the sector and that they regard rivalry as a push mechanism, forcing them to upgrade in terms of both medical services and non-medical services (hotel services, catering and so on). Furthermore, *the interviewees highlighted that fierce domestic rivalry, and*

*limited revenue coming from the social security institution and private insurance companies have compelled private hospitals to enter into the medical tourism market.*

As far as geographical concentration is concerned, it is seen that Turkish Hospitals are mainly located in cities *where the scale of demand is large*. The interviewees pointed out that *there are four main sources of finance for hospitals; social security insurance, out of pocket, private insurance and medical tourism*. Social security insurance pays only a small portion of the service. It is also very hard to find customers who pay directly out of their pockets. Therefore, privately insured and foreign customers become increasingly vital. Income from private insurance constitutes approximately 40% of hospital revenue. Hospitals compete intensely to attract privately insured customers. This customer segment (high-level income) mainly resides in the highly populated Marmara region (30% of private hospitals are in Istanbul) and therefore, private hospitals are mostly located in that region (Deloitte, 2014, p. 34). In addition, private insurance firms locate in this region. Izmir, Ankara and Antalya are other cities where private hospitals are generally located. The populations of these cities are also those of higher income levels. Furthermore, these cities are also the principal tourism places in Turkey and enjoy the convenience of air transport (direct flights to many points). It is evident that there is clustering for the hospital industry in Turkey. Porter's theory proposes that geographical concentration raises the rivalry (Porter, 1990, p. 157). As far as the Turkish Hospital clustering is concerned, interview findings also validate this preposition of the theory.

Strategies adopted by the private hospitals revealed by the interviews are conducting intense and continuous marketing and promotion activities internationally and domestically, having international affiliation with world-wide prestigious healthcare organizations and being accredited by prestigious authorities. *These strategies are same in emerging countries: Thailand, Singapore, India and Malaysia. Such strategies are developed to give the assurance that hospitals provide quality and safety in healthcare services* (Enderwick & Nagar, 2010). It can be inferred that these strategies contribute to the corporate image of the healthcare providers. As far as the strong positive relationship between the corporate image and patient loyalty (Bayın & Önder, 2015), these policies on corporate reputation results in increased number of foreign patients. The interviewees highlighted that

developing affiliations are regarded as a tool increasing recognition of the hospitals. Turkey has the fourth highest number of JCI accredited hospitals (Deloitte, 2014, p. 75). According to statistics provided by the Ministry of Health (Evaluation of Medical Tourism Report on Medical Tourism in Turkey, 2013), the number of foreign patients receiving services from accredited hospitals is ten times greater than the number receiving services from non-accredited hospitals. However, the reputation is not a tool proving a sustainable success. Improving value for patients should be the only guide that lead the strategy in healthcare (Porter & Lee, 2015).

#### Chance Factors

The interviewees referred to some major factors contributing to the international success they have attained. One is war and unrest in Turkey's neighboring countries. The wars in Iraq, Syria, and Libya have caused many patients to come Turkey to benefit from health services. Moreover, following the dissolution of the Soviet Union and Yugoslavia, many weak counties with insufficient health services infrastructures have emerged. As a result, large number of patients from these regions preferred Turkey. Also, since relationships between Georgia, Russia and Ukraine have worsened, many patients have started to come to Turkey for medical services. Additionally, Turkey's recognition as a one of the leading Muslim countries and the country's improved relationships with its Arab neighbors have increased the number of patients coming from these countries. Lastly, since the September 11 attacks, the US has made entering and exiting the country difficult, so foreign patients, especially those from Arabic countries, have begun to prefer Turkey for medical treatment.

#### The Role of Government

Porter (1990, p. 128) proposes that government can have an important impact on international success, although its role should be indirect. Porter (1990) says that if government policy is the only advantage for a country, then international success dries up. Government policies can be successful only if other determinants are favorable and government supports them. There two options: the government facilitates the competitive advantages or adversely influences success. Government has no power to create competitive advantage.

Porter (1990, p. 265) proposes that if government-owned healthcare entities are prevalent, international activity is limited. He also emphasizes that privatization

does not only enhance service cost, and quality but also promotes internationalization (Porter, 1990, p.247). He says that government-owned service organizations are generally not successful in international competition, and completely or partially government-owned health systems slow down innovation. Fortunately, since the 1980s, privatization attempts have been observed as the Turkish economy became liberalized. Actually, Turkey was influenced by the neoliberal health policies of the World Bank (Karakaş & Yılmaz, 2011). These policies are based on the principle that the private sector provides higher quality health services and that government role is solely regulatory; therefore, health services should be supplied by the private sector. The interviewees stated that liberalization, starting with the Özal period, enabled the privatization of the hospital industry. This period also broadened visions of the business community and entrepreneurs, encouraging them to open up to the world. The Turkish government additionally supplied incentives specific to hospital industries in this period, which showed its effect after 1985 as an upsurge in the private healthcare sector. The dynamics of this period contributed to the activation of the hospital sector in Turkey. The interviewees also remarked that quality increased with privatization. All these developments are consistent with Porter's words regarding privatization (Porter, 1990, p. 247).

Currently, the "Transformation in Health Program" – the existing government health policy – is attempting to put policy from the Özal period into practice. This program mainly aims to promote investments in health sector, and reduce the involvement of government as provider, and assign this role to the private sector. To realize this, the government enabled patients to benefit from their social security in private hospitals. As a result, per person application to private hospital number between 2002 and 2012 increased to 9 times (Çavmak & Çavmak, 2017). However, after the implementation of the Transformation in Health Program, the concerns related to the efficiency of health services financing since expenditure for outpatient care in private healthcare organizations is twice as great as in public healthcare organizations (Yılmaztürk, 2013). This condition triggers to question value creation in the healthcare system since value covers efficiency and defined as outcomes relative to costs (Porter, 2010, p. 2477). Value improvement is so vital that patients, payers, providers, and suppliers all gain. Porter (2010) suggests a holistic perspective for value creation in which cost reduction and outcome enhancement should be done through the whole process of

healthcare delivery. Based on this perspective, it is proposed that Turkish Government should play more active role in development of medical device industry in order to reduce costs in the whole system. More specifically, the creation of national environment which promotes innovation in medical device industry will contribute to the cost reduction and health services financing since innovation in health care industry have substantial cost-reducing power (Porter et al., 1994) Although this is the case, through this program, the Turkish Government has strived to make the healthcare industry one of leading sectors in Turkey. The interviewees highlighted that the Transformation of Health Program has led more citizens to benefit from private and public health services through the universal coverage system and the procurement of private health services. In this way, the government has made the sector more attractive and enabled new players to enter the market. As a result, domestic rivalry has increased, which is the objective of the Transformation of Health Program. The interviewees forcefully underlined that without these two policies the hospital industry could not have reached the current level. When looked at the distribution of private hospitals by years, it is clear that since 2005 (the year from which Turkish citizens can use their social security insurance at private hospitals); there has been a drastic increase in the number of private hospitals (Ministry of Health of Turkey, 2012, p. 65). Nonetheless, although the current Turkish Government always mentions the necessity for an increased role by the private healthcare sector in its developments plans (Karakaş & Yılmaz, 2011), in 2008 the Turkish government banned new licenses for establishing new hospital facilities in Istanbul, Ankara and Izmir (these cities have the highest number of private hospitals). The explanation that the government gives for this is to balance the hospital-doctor ratio. On the other hand, this application has resulted in an increased number of mergers and acquisitions in the sector. Porter (1990, p. 664) underlines that deregulation and privatization alone are not enough for success; there must also be active domestic rivalry. Therefore, the Turkish government should apply an effective antitrust policy.

Porter (1990, p. 647) suggests that governments may influence the timing and sophistication demand by setting quality standards and strict regulations. From the interviews, it can be inferred that by improving the quality considerably in public hospitals, the Government has raised the minimum level of quality expected from private hospitals too.

In brief, the Turkish Government has influenced the sophistication of demand by improving public health services, the size of the demand as a result of universal coverage and getting health services from public.

Porter (1990, p. 640) proposes that tax incentives would be better than subsidies for promoting the upgrading of an industry, as they primarily encourage firms to start to work on projects, then they can benefit from the incentives. The interviews indicate that tax reduction is one of the reasons for establishing university hospitals. In this respect, the Turkish government tax incentive for private university hospitals has lead private hospitals establishing university hospitals. In this way, the Turkish government may indirectly influence factor scarcity. Moreover, the incentive packet for investments in private hospitals published in the Official Journal on 19.06.2012 (Resmi Gazete, 19.06.2012) includes customs tariff exemption for imported machines and equipment, value-added tax exemption for imported machines and equipment, tax reduction on revenue, insurance premium support, allocation of investment place, and interest support. As Porter (1990, p. 640) mentioned, all of these incentives are suitable, since they first lead to investment and then benefits from the incentives. Additionally, the Turkish Government provides some subsidies for medical tourism. Mainly, it is observed that these subsidies intensify promotion and marketing activities. Porter (1990, p. 640) highlighted that direct subsidies are appropriate if they constitute a modest fraction of the cost involved, and if the government uses them as signals to direct firms towards the necessary corporate behavior. Therefore, I construe this to mean that the Turkish Government employs these subsidies in order to indicate the significance of promotion and marketing. Moreover, the Turkish government gives subsidies for patients' air transport. Porter (1990, p. 640) describes incentives to buyers as a better way to stimulate the development of advanced new products rather than giving direct support to firms. To conclude, the Turkish government utilizes these incentives and subsidies efficiently for competitive advantage. The interviewees acknowledged that incentives and subsidies supplied by government are beneficial for international success.

In 2009, the Turkish Government also added the pharmaceutical industry and the medical device industry into the incentive packet (Karakaş & Yılmaz, 2011). Furthermore, the Turkish Government gives a 100% reduction in corporate tax for research and

development investment in pharmaceuticals (Karakaş & Yılmaz, 2011). Nevertheless, incentives should be improved in order to cover all properties of the pharmaceutical industry (Healthcare Industry in Turkey Report of Deloitte, 2014). Investment in R&D activities in the pharmaceutical industry is vital, in that it increases the production of innovative drugs and as a result eases access to innovative drugs, which is very important for medical tourism. Although, the government tries to encourage domestic production in the medical device and pharmaceutical industries, as I mentioned before, Turkey lags behind the rest of the world in terms of its success in these sectors. The interviewees underlined that these sectors do not have the necessary strength invested in research and development and need partnerships with advanced firms. Moreover, the Turkish government shows some effort in supporting the Insurance Industry. To do so, it has created some regulations aiming to make the Turkish Insurance sector compatible with the European Union's regulations in order to strengthen the sector (Healthcare Industry in Turkey Report of Deloitte, 2014).

Porter (1990, p. 257) states that since there is a growing need for complex and specialized services, the advanced factor creation mechanism plays a significant role in international service competition. Therefore, the role of government in factor creation becomes more important in the service sector. For example, interviewees remarked that the government sent a large group of physicians abroad for training and when they returned to Turkey, they transferred their knowledge. Furthermore, sector representatives demand the necessary regulations from the Turkish Government for the employment of foreign physicians and nurses, due to the scarcity of medical staff. Sector representatives regard the recruitment of foreign personnel as a remedy to cover the urgent need for medical personnel who speak foreign languages (Karakaş & Yılmaz, 2011). The act, which permits the hiring of foreign physicians and nurses, became law on February 22, 2012, and was published on the Official Journal (Resmi Gazete, issue: 28212, 22.02.2012). On the other hand, the Turkish Government's policy concerning the employment of nurses in public hospitals creates a disadvantage for private hospitals. The interviewees also emphasized that the regulation regarding the full-time working of physicians has reduced the number of academicians in medical school. Even so, some think that this regulation will be a remedy for the shortage of physicians in the private healthcare sector (Karakaş & Yılmaz, 2011).

The interviews proposed some suggestions about government healthcare policies that are believed to contribute to the healthcare sector if included in the current healthcare policy. Porter (1990, p. 645) suggests that Government should set stringent products specifications not accept only what domestic suppliers offer. Interviewees strongly draw attention to the urgent need for setting national medical tourism standards. They stated that some firms with low prices and low quality in medical tourism are harmful to Turkey's prestige. Furthermore, the government should develop flexible visa regulations for foreign patients. This is crucial for medical tourism. Moreover, the government is expected to improve foreign language education in schools that train medical personnel. Lastly, the government should also shorten licensing duration for innovative and new drugs. In this way, access to innovative drugs becomes more straightforward. Access to innovative drugs is very important for medical tourism.

### Discussion and Conclusion

Porter (1990) suggests four distinct stages of national competitive development: factor-driven, investment-driven, innovation-driven, and wealth driven. It is apparent that Turkey seems to be in the investment-driven stage. During this stage, a nation's firms aggressively invest capital into large scale, efficient and modern facilities, by sourcing the best foreign technology available on global markets in order to be able to compete in more sophisticated industries and industry segments. Modern facilities and sophisticated technology enable a nation to benefit from factors much more efficiently. The distinctive feature of this stage from the factor-driven stage is that firms do not only use foreign technology and methods but also enhance them. Moreover, at this stage, nations, their citizens and firms, strive to create advanced factors (improvement of basic factors) and a modern infrastructure; hence, they also aggressively invest in human resources and infrastructure. There are skilled workers and technical personnel who are paid relatively little, and yet have the capability to run sophisticated facilities and create internal strength for the enhancement of technology. All these characteristics well suit the Turkish Hospital Industry. Porter's findings about the investment-driven stage are also true for Malaysia and Singapore, Thailand other developing countries, in terms of hospital industry. They all enjoy warm climate, pleasant natural environment, high technology, modern facilities,

well-trained relatively low-waged medical staff and a convenient air transportation infrastructure (Enderwick & Nagar, 2010, Jaisuekul & Teerasukittima, 2017).

The investment-driven stage is also characterized by intense domestic rivalry, which obliges firms to invest continuously to reduce costs, to upgrade quality, to release new models and to develop more modern processes. As I mentioned in part about domestic rivalry, sector representatives acknowledged that intense rivalry in the sector urges hospitals to upgrade and reduce costs. Setting corporate goals aiming at heavy investment in technology and capital assets is also specific to this stage. In Turkey, hospitals are in technological competition. They use world-class technology as a marketing tool to attract customers and as a deterrent against new entrants.

As a feature of the investment-driven stage, firms competing in price-sensitive segments of the market and with cost-based strategies, face much higher entry barriers. Hospitals in Turkey compete on prices and cost controls. In order to control costs more effectively, their objective is to establish chains of hospitals. Moreover, new entrants in the hospital industry may encounter high entry barriers, such as heavy investment in technology and medical staff shortages, as well as customer loyalty.

The home market demand for healthcare services in Turkey has been growing as consequence of an increasing population, an ageing population, a higher incidence of chronic diseases, wider health insurance coverage, increasing economic welfare and the country's changing disease profile. In other words, local conditions in Turkey cause the scale of demand to increase. Porter (1990, p. 555) describes successful industries in the investment-driven stage as mainly those where home market demand is relatively large because of local circumstances. Growing demand has contributed to the success of the Turkish hospital industry. Furthermore, competitive advantage at this stage depends on "supply push rather than demand pull." The government and private sector has shaped the demand characteristics of health care customers in Turkey and so this is true for the Turkish Hospital Industry.

The correct role of government during the investment-driven stage includes channeling limited capital into particular industries, shaping national priorities and influencing demand sophistication, encouraging risk-taking through implicit or explicit

guarantees of assistance, supplying temporary protection to spur the entry of domestic rivals, the construction of efficient scale facilities and promoting the acquisition of foreign technology and exports (Porter, 1990, p. 555). The Turkish government plays a considerable although indirect role through boosting rivalry, setting national priorities, contributing to demand sophistication, challenging capital into the sector and encouraging the procurement of foreign technology with the help of subsidies and incentives. Similar patterns of strong government support are seen in other emerging markets, including Thailand, India, Malaysia and Singapore (Enderwick & Nagar, 2010; Bhaidkar, 2014; Jaisuekul & Teerasukittima, 2017).

Porter (1990, p. 104) specifies that the development of domestic suppliers provides more sustainable advantage than foreign suppliers. Unfortunately, supporting and related industries are not satisfactorily advanced, and the hospital industry in Turkey mainly depends on foreign technology and imported medical consumables. This finding contradicts Porter's

framework. However, Porter (1990, p. 550) claims that this is a neutral case for a nation in the investment-driven stage.

These results are generally supportive of Porter, meaning that for a country in investment-driven stage the Turkish hospital industry exhibits the characteristics proposed by the diamond framework. In sum, Turkey enjoys high technology, modern facilities, well-trained relatively low-paid medical personnel; favorable air transportation and strong government support but lacks an adequately sophisticated home demand, and advanced supporting and related industries. Porter's findings about the investment-driven stage are also valid for other developing countries in terms of the hospital industry, which include Thailand, India, Malaysia and Singapore. They all enjoy high technology, modern facilities, well-trained relatively low-paid medical staff, convenient infrastructure of air transportation and strong government support, as is the case with Turkey.

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