



## A first evaluation of the relationship between High Speed Rail (HSR) and the tourism sector in Turkey: The cases of two Turkish cities

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### Abstract

In Turkey, extensive investments have been made to develop HSR services since 2003. As a strategic and growing industry that relies on the increased mobility among cities and countries, tourism can benefit from these HSR services. But there are different types of tourism requiring different travel services. Due to this diversity, it is important to investigate the impact of the HSR lines on the tourism sector in specific case studies. In Turkey, the highest HSR ridership were observed in Ankara-Eskişehir and Ankara-Konya HSR corridors, each having more than 1.5 million HSR passengers annually. Konya is a major place of religious and cultural tourism attracting more than 2 million tourists every year, and Eskişehir is characterized by its identity of "University City", theme parks, cultural and archaeological places that attract mostly domestic tourism. On one hand, recent studies on the HSR impact on Eskişehir and Konya showed that the advantages provided by HSR caused an increase in the number of daily visitors and on the other hand, some studies stated that main trip purposes for HSR trips were tourism and business. However, the net impact of HSR on tourism in these two cities has not been investigated. This is the aim of this paper. First, the change in the HSR ridership for all the existing corridors will be analysed to understand the development of HSR use. Secondly, tourism potential of HSR cities will be evaluated based on available tourism statistics, socio-economic characteristics of the cities, major touristic destinations (in or within the vicinity of the city) and tourism types. Spatial distribution of the touristic destinations in Konya and Eskişehir will be evaluated in more detail with respect to accessibility from HSR station (intermodal connections, public transit availability, etc.) as case studies.

**Keywords:** high speed rail, tourism, Turkey, Eskişehir, Konya

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# 1. Introduction

In Turkey, extensive investments have been made to develop the HSR services since the beginning of the 2000s not only to create a more sustainable transportation network, but also to integrate national railway network to Trans-European railway network (Babalik-Sutcliffe, 2007; Dalkic, 2014). Currently there are four HSR lines in operation which connect 7 cities (solid double lines in Figure 1). The existing HSR lines were also combined with the intercity bus and conventional rail services to reach five nearby cities. Three new HSR lines are under construction and 13 HSR projects are in the planning stage, which will serve 47 cities when realized.



Figure 1. Intercity passenger alternatives along the current HSR network

Tourism (domestic and international) is a strategic and growing sector that can enrich the common culture, and create wealth. According to World Travel Tourism Council--WTTC (2017) Travel & Tourism's contribution to world GDP was rising to a total of 10.2% of world GDP (US\$7.6 trillion). Moreover, 292 million people that is 1 in 10 jobs are employed in this sector. Tourism is also a critical sector continuously included in development plans of Turkey for many decades. With the expansion of HSR network, economic, spatial and social impacts at a national level are expected. As a result of the increase in accessibility, some cities and regions will become more attractive; thus become important from tourism perspective.

As HSR is a newly introduced intercity passenger transportation alternative in Turkey, its impact on tourism has not been investigated much, yet. This study aims to provide a preliminary evaluation of the effects of the HSR on the tourism sector in two Turkish cities served by HSR first: Eskişehir and Konya. After a literature review about the relationship between HSR and tourism in Section 2, the evolution of the HSR ridership in Turkey is presented in Section 3, with some additional background on tourism section. Spatial distribution of the touristic destinations in Konya and Eskişehir will be evaluated in more detail in Section 4 with respect to accessibility from HSR station (intermodal connections, public transit availability, etc.) as case studies. The results of the study are expected to contribute to the existing literature on HSR and tourism and develop recommendations to increase benefits of HSR on tourism. Lastly, Section 5 is devoted to some conclusions.

## 2. Literature on HSR and tourism

Tourism-related service sectors play an important role in the regional development of the European Union countries. HSR service has a role in increase in tourist travel, and tourism and service sectors are therefore directly affected (Lumsdon and Page, 2004). Among different kinds, urban and business tourism and in-situ tourism (parks, etc.) appear to be the main types of tourism likely to benefit from an HSR service, when the station is located inside the destination. Compared to car journeys, traveling by HSR allows passengers to get to their destination faster while being able to relax and at the same time, avoid road congestion and the increasing difficulties associated with accessing the heart of the city. Compared to air travel, it also saves the time lost in travelling between the airport and final destination. In fact, all forms of forms of tourism in the city could benefit from HSR services; but, tourism forms outside cities (i.e. green tourism or mountain tourism) often benefit less from HSR, unless inter-modality issues are managed to reach their destinations without significant time losses.

Ex-post identified impacts of HSR on tourism can be positive as well as negative or inexistent (see Table 1 and Table 2). Positive impacts (expected or realized) can be listed as widening the tourism markets (increasing the number of tourists, tourism trips, occupancy rates, foreign arrivals, tourism revenues, etc.), improving the accessibility of the destinations (increasing the winter-sport tourism, urban tourism, business tourism). It can also reinforce the competition between tourist destinations (which can be positive or negative). For example, in Spain, Urena et al. (2009) argued that large intermediate cities served by HSR such as Zaragoza and in particular Córdoba were experiencing an increase in urban tourism and business tourism. This was confirmed by Alonso and Bellet (2009) in the case of Zaragoza. Similarly Todorovitch et al. (2011) reported that tourism had grown by 15% annually in Lleida. Guirao and Campa (2015) also reported how HSR was important for tourism in Toledo: over thirty percent of weekday HSR ridership was linked to tourism mobility. But a recent report in Spain suggested that *“the positive impacts of HSR on the number of visitors, the number of nights spent at destination and/or hotel occupancy rates were mostly restricted, at best, to larger cities, but in most cases the impacts are minimal or even negative”* (Albalade et al., 2015).

An increase in tourist movements was mentioned in big cities in Taiwan (Cheng, 2009) as well in Chinese cities such as Wuhan (Wang et al., 2012), Qufu (People's Republic of China, 2014), and Ningbo (Zhao, 2012). Provinces served by HSR in China “were likely to have approximately 20% more foreign arrivals and 25% more in tourism revenue than provinces without such systems” (Chen and Haynes, 2012). Seeking theoretical foundations of the main impacts of HSR on China tourism, Wang et al. (2012) are using the gravitational and the iso-tourist line models with integrating the time-space replacement mechanism. They identified three kinds of impacts: i) an enlargement and a transformation of tourism market space, ii) intensification of the market competition on a larger scale, and iii) a redistribution of tourism centres.

On the other hand, HSR may have negative impacts (expected or realized) such as decrease in overnights stay and tourist revenues. In France there is no growth in small cities and for winter-sports tourism. A reduction in the average length of stay and in the number of nights spent in a city is likely to occur because HSR opens up the possibility of same-day round trips. As an example, in Le Mans in France, the arrival of HSR has contributed to reducing the duration of events and, conversely, to promoting non-residential events, i.e. fewer events lasting several days but more one-day events. In this city, the average length of stay decreased a few years after the arrival of HSR. Furthermore, events had an average duration one day shorter than that generally encountered for national conferences in France in the mid-1990s (Amiard, 1997).



Table 1. A review of the studies showing positive impacts of HSR on tourism

Impacts	Studies (Realized; Expected)
Widening of tourist markets	Sands, 1993 ; Urena et al., 2009; Chen & Haynes, 2015 ; Wang et al., 2012 ; Masson & Petiot, 2009
Increase in the number of tourists	Mannone, 1995 ; Sands, 1993 ; Buttet et al., 2001 ; CRT PACA, 2004, Chen & Haynes, 2014, Bazin et al., 2010, 2011, 2013a, 2014, CSEF, 2005; People's Republic of China, 2014; Okabe, 1980, Kurihara and Wu, 2015, Urena et al. 2009,
Increase of tourism trip	Cheng, 2009, People's Republic of China, 2014; Zhao, 2012
Increase of foreign arrivals	Chen & Haynes, 2012, 2014
Increase in occupancy rates	Sands, 1993 ; Mannone, 1995
Increase of the number of hotel rooms	Okabe, 1980, Mizohata, 1995, Vickerman and Uljed, 2006
Growth in the number of nights	Tourisme- Alsace, 2009
Limited impacts to larger cities	Albalate et al., 2015
Increase in the number of nights in the short run	INSEE Lorraine 2009
Improvement of the accessibility of the destination	Chen & Haynes, 2014; Coronado et al. , 2013 ; Wang et al. , 2012; Masson & Petiot, 2009
Increase in the winter-sports tourism	Mizohata, 1995
Impact on hinterland areas	Okabe, 1980
Increase the probability to come again (to be a repeater)	Delaplace et al., 2014
Urban tourism development	CRCT PACA, 2003; Bazin et al., 2010, 2011, 2014; Delaplace&Perrin, 2013, Urena et al., 2009; Delaplace and Benoit-Bazin, 2017; Alonso and Bellet, 2009, Guirao and Campa, 2015
Business tourism development	Amiard, 1997; Faye, 1998 ; Tourisme-Alsace, 2009; Bazin et al., 2010, 2011, 2013a; Ville de Marseille, 2011 ; Delaplace & Perrin, 2013 ; AUDRR, 2012, Urena et al., 2009 ; Alonso and Bellet, 2009 ; Todorovitch et al., 2011
Increase in tourism revenues	Chen and Haynes, 2012
New forms of governance	Bazin et Delaplace, 2015, Delaplace and Benoit-Bazin, 2017
Positive impacts on tourist destination choice	Pagliara et al., 2014; 2015 ; Delaplace et al. 2014, 2016; Saladié et al., 2016, Valeri et al., 2012

Source: Adapted and completed from Delaplace et al., 2014.

Similarly, according to an analysis by the French statistics office, INSEE, between 2007 and 2008, the average stay in tourist accommodation declined in almost all areas served by the East European High speed Line, as well as in Reims in 2007 (INSEE Lorraine, 2009). This reduction also reflects the change in the strategies of companies, which are increasingly moving towards one-day conferences to reduce budget. Furthermore, this reduction in overnight stay can lead to an overall reduction in spending by tourists (Levinson, 2012). This trend reveals the contradictory impacts of HSR on tourism (Albalate, Bel, 2010). The analysis of numerous case studies also shows the importance of public policies in served cities (Bazin-Benoit and Delaplace, 2015, Delaplace et Benoit-Bazin, 2017).

Table 2. A review of the studies showing negative or no impacts of HSR on tourism

Impact	Studies (Realized; Expected)
No growth of tourism in small cities	Bazin <i>et al.</i> 2013a
Decrease in overnights stay	Bonnafous, 1987; Mannone, 1995 ; Haynes, 1997; Sands, 1993
Fall in the length of stays in the long run	INSEE Lorraine 2009; Bazin <i>et al.</i> , 2011; 2014, AUDRR, 2012, Bonnafous, 1987, Mannone, 1995; Amiard; 1997, Okabe, 1980 ; Chen,2013
Expansion of same-day round-trip journeys	Mizohata, 1995
No growth in the winter-sports tourism	Bonnafous, 1987
Reinforcement in the competition between tourist destinations	Chen & Haynes, 2012 ; Coronado <i>et al.</i> , 2013 ; Wang <i>et al.</i> , 2012 Masson & Petiot, 2009
Negative impacts on air transport tourism	Albalate, D., Fageda, X. 2015
Decrease in tourism revenues due to the decrease of the length of stay	Levinson, 2012
No impact on tourism destination choice	Delaplace <i>et al.</i> , 2016; Valeri <i>et al.</i> , 2012

Source: Adapted and completed from Delaplace *et al.*, 2014

Another important point is that there has been no systematic impact on destination choice. For example, a survey carried out in 2012 in Paris showed that HSR is the third most important element in the choice of destination after historical and cultural heritage, and architecture (Delaplace *et al.*, 2014). Moreover, the modelling results showed that the HSR variable was highly significant in the probability of returning to Paris for tourism purposes. In another study on Disneyland visits, tourists declared that HSR was so crucial in their choice of destination that they would not have come without the presence of an HSR service (Delaplace *et al.*, 2016). Another survey, conducted in Naples, showed that there was an impact with regard to visits to Naples and the intention to visit other cities nearby by HSR (Pagliara, 2014).

The analysis conducted in Madrid showed similar results: no impact on Madrid itself, but an impact on cities linked to Madrid by HSR (Pagliara *et al.*, 2015). Here, the extreme heterogeneity of situations comes to the fore, often with reference to specific cases, underlining the need





for contextualization (Delaplace, 2012). The impacts of HSR cannot be understood without considering the socio-economic characteristics of the areas it serves, in tourism as in other fields (Bazin et al., 2013b).

### 3. Background on HSR and tourism sector in Turkey

#### 3.1 HSR Network in Turkey

The first HSR line, Ankara-Eskişehir (ANK-ESK), started to serve in 2009, followed by Ankara-Konya (ANK-KON) line in 2011. After the completion of the 155 km HSR corridor between Eskişehir and İstanbul, Ankara based HSR service was extended to İstanbul (ANK-IST) in 2014, followed by KON-IST services in the same year (see Figure 1).

Total HSR line length, annual passenger volumes and passenger-km until 2016 are presented in Table 3 based on the most recent statistics by Turkish State Railway (TSR). Total ridership has been increased from about 1 million to 6 million trips in 8 years; ANK-ESK HSR line has been the most demanded service with a constant increase in the first five years of operation. ANK-KON has also been used with an increasing demand in the first four years of operation. But, KON-ESK line has not created as big a demand as the other two lines (see Table 3) and the direct services were cancelled for this line (currently it is served by KON-IST line) in 2015. In a TSR report, it was claimed that HSR shares in ANK-ESK and ANK-KON corridors reached 70% and 66% and induced demand was generated in these two lines as 12% and 18%, respectively (TSR, 2016). As a result, it caused drastic decreases in bus shares (from 55% to 10% in ANK-ESK corridor and from 70% to 17% in ANK-KON corridor), as well as private car shares (from 37% to 18% in ANK-ESK corridor, from 29% to 17% in ANK-KON corridor).

Table 3. Evolution of passenger volume and passenger-km for HSR lines in Turkey (TSR, 2016; TSR 2017a)

Years	2009	2010	2011	2012	2013	2014	2015	2016
Total Line Length (km)	397	888	888	888	888	1213	1213	1213
Total Ridership (x106)	0.94	1.89	2.57	3.35	4.21	5.09	5.69	5.90
Total Passenger-Km (x106)	237	476	665	914	1,186	1,554	1,847	NA
<i>Ridership by HSR lines (10<sup>6</sup>)</i>								
ANK-ESK	0.94	1.89	2.15	2.00	2.27	1.92	1.28	2.20
ANK-KON	---	---	0.41	1.39	1.75	1.89	1.80	0.68
KON-ESK	---	---	---	---	0.20	0.25	---	---
ANK-IST	---	---	---	---	---	0.99	1.96	2.20
KON-IST	---	---	---	---	---	0.31	0.66	0.68

Note: NA: Not available data.

In a customer satisfaction survey conducted in 2016 by TSR reaching 1455 passengers travelling along HSR corridors, it was observed that 35% of the participants travelled 2-5 times, 18% of them travelled 6-10 times, 12% travelled 11-20 times and 17% of them travelled more than 21 times in one year (TSR, 2017b).

On ANK-ESK HSR line, 29% of the passengers travelled more than 21 times in a year while 14% travelled 11-20 times. Similarly, for ANK-KON HSR line, 22% of the passengers travelled more than 21 times and 14% travelled 11-20 times in a year. This suggests frequent use of HSR for regular activities.

When the purpose of the realized HSR trips were examined, it was revealed that 57% of the participants had tourism purposes (vacation, family/friend visit), while 20% of them had business purposes. Education trips (for students or lecturers, etc.) consisted only 7% among other trip purposes. For ANK-ESK and ANK-KON lines, almost 50% of the trips had tourism purposes (vacation, family/friend visit).

The most important factor behind the HSR preference was stated by the participants as the “short travel time”, followed by “being fast”, safety and punctuality. However, about half of the participants stated that appropriate schedule of trains and comfort was also important in their choice.

The general satisfaction of participants from the HSR services was determined as 87% (TSR, 2017b). In another study on travel characteristics of HSR users (Celikkol-Kocak et al., 2017) conducted as HSR main stations, a significant amount of first-time HSR users (23.3% of the 412 participants) were interpreted as HSR is still in a growing stage and its current pricing level encourages people to experience it. Also, it was stated that more than 40% of the participants had business or tourism trip purposes.

### 3.2 Service characteristics of the transportation modes along HSR corridors

As the modal attributes are necessary to develop mode choice models, travel time and cost information of the HSR, bus and air alternatives were compiled from National Transportation Portal (NTP) for each HSR corridors as shown in Table 4 (NTP, 2016).

The weekly service frequencies for all three modes were gathered to give an idea about the size of the intercity passenger sector for these corridors. (Service is defined as the number of round-trips for a given corridor). ANK-ESK was the most frequently served HSR line with 77 services in a week.

Second highest service frequency was observed on ESK-IST line with 56 services a week. KON-ESK and KON-IST are the least served HSR lines with only 14 services a week (corresponding to 2 round- trips a day). These service frequencies are highly correlated with the annual ridership values of HSR lines, but it is not possible to comment on the causality of the relation, as whether low service frequencies cause low ridership, or viceversa.



Table 4 . Service attributes of HSR and alternative modes

	Road Distance (km)	Weekly Service Frequency (One-way Trips)			Average Ticket Fare (\$)*			Travel Time (minutes)**		
		HSR	Bus	Air	HSR	Bus	Air	HSR	Bus	Air
HSR Lines (in operation)		HSR	Bus	Air	HSR	Bus	Air	HSR	Bus	Air
ANK-KON	262	42	442	30	8.7	8.3 (0.3)	68.6 (9.2)	115	222 (22)	288 (82)
ANK-ESK	235	77	511	---	8.7	7.5 (0.8)	---	95 (2)	191 (20)	---
ANK-IST	450	42	854	350	20.3	17.1 (3.4)	44.8 (21.4)	249 (5)	386 (30)	72 (9)
KON-ESK	340	14	84	---	11.2	12.5 (0.7)	---	100	304 (9)	---
ESK-IST	310	56	359	---	13.1	9.8 (1.7)	---	152 (4)	331 (23)	---
KON-IST	712	14	259	64	24.7	20.7 (1.4)	37.6 (13.1)	260	620 (48)	82 (7)
HSR Lines (under construction)										
ANK-BUR	387	---	492	5	---	13.9 (2.2)	28.5	135	300 (19)	50
ANK-SIV	440	---	279	---	---	12.9 (1.1)	---	120	394 (20)	---
ANK-IZM	585	---	358	237	---	17.7 (3.3)	62.4 (27.1)	210	501 (24)	209 (109)

(\*)Ticket costs are converted to US Dollars with a rate of 3.44TL/\$ for October, 2016. (\*\*)Travel time values were rounded up to the whole numbers.

While bus transportation is an available alternative for all corridors, its service frequency varies greatly among the corridors: on ANK-IST corridor which connects the two most populated cities in Turkey, İstanbul (14.4 million) and Ankara (5.1 million), there are 854 services a week. It is followed by ANK-ESK corridor (511 services a week), which is mostly a sub-network of the ANK-IST corridor. Air transportation is available for three HSR corridors (as ANK-KON, ANK-IST and KON-IST) and there is no air alternative for travellers in Eskişehir due to the proximity of the city to the other major HSR cities (Ankara, Konya, and İstanbul). Both the legacy and low-cost airline services in ANK-KON corridor include a must-transfer in İstanbul airport which increases cost and travel time significantly (\$68.6 and 288 min., respectively) and this makes unattractive air alternative on this corridor. However, there are direct air services for ANK-IST and KON-IST corridors.

Note: While calculating the average travel time and cost values one week service information was gathered (28.11.2016-04.12.2016) and the arithmetic average was taken. For HSR ticket cost, economy class adult ticket; for intercity bus standard ticket (constant price for one-seat) was taken. Additionally, standard deviation values were given in the parenthesis.



### 3.3 Tourism sector in Turkey

Turkey is characterized by different tourism types such as coastal tourism, cultural tourism, thermal tourism, religious tourism. The share of tourism sector in Gross National Product (GNP) of Turkey has increased from 0.8% to 4% between 1983 and 2013 and it employs more than 12 million people. Turkish tourism sector succeeded to become in the top ten countries that attracts more international tourists with 29.9 million visitors in 2012. In 2014 as in in 2015, Turkey is at the sixth position in the world with respectively 39.8 and 39.5 millions of foreign arrivals (United Nations World Tourism Organization-, 2016). Ministry of Culture and Tourism Statistics showed 25 million foreign tourist arrivals in 2016, with top three countries of nationalities as Germany, Georgia and United Kingdom. The statistics showed that majority of the foreign tourists arrived Turkey by airway (70.1%) followed by road transportation with 23.8%. Railway had a very small share with 0.06% and maritime transportation had about 6% share (Ministry of Culture and Tourism, 2017).

According to the 10th Development Plan (prepared for 2014-2018 years), tourism sector is expected to constitute 45 million dollar share of 1.3 billion dollar Gross Domestic Product (GDP) of Turkey. Also the number of international tourist is expected to reach 48.3 million by 2018 (Ministry of Development, 2014). Moreover, in the 2023 Tourism Strategy of Turkey, the aim is to make Turkey in the top five countries in the world concerning the tourists' number and the tourist' revenues and to develop domestic tourism. Additionally, 8 thematic zones have been proposed including some HSR cities (For instance Phryg cultural and thermal tourism zone concerns Eskişehir and Afyon).

## 4. Evaluation of the link between HSR and tourism in Turkey

### 4.1 Methodology

The study aimed to present a preliminary evaluation of the link between HSR and the tourism sector in two Turkish cities as Eskişehir and Konya. In order to give general information on city- based characteristics, a general evaluation was presented for all HSR cities including population, employment rate, satisfaction with urban transportation services, life index ranking and human development index. Secondly, tourism potential of HSR cities was be evaluated based on available tourism statistics, socio-economic characteristics of the cities, major touristic destinations (in or within the vicinity of the city) and tourism types. Spatial distribution of the touristic destinations in Konya and Eskişehir was evaluated in more detail with the prepared maps and the accessibility of touristic destinations from HSR station (intermodal connections, public transit availability, etc.) was investigated.

### 4.2 General presentation of HSR cities

A background information is presented in Table 5 for the seven cities currently served and six cities soon to be served by HSR, showing population, population change rate for the period of 2016 and 2023, satisfaction with in-city transportation service, life index ranking and human development index. İstanbul and Ankara are the two biggest cities as mentioned above. Bursa and İzmir also have high populations of 3 and 4 million, respectively, that will have HSR services soon. While Kocaeli and Konya have populations around 2 million by 2023; but, Eskişehir, Sakarya and Manisa will be relatively smaller cities with populations around 1 million people. On the other hand, Bilecik, Sivas, Afyon and Uşak are much smaller cities on the HSR corridors, which are also not expected to have high population change rate. While these smaller cities seem to have slightly higher employment rate than others, the employment rates of the cities seem to be stuck within the range of 40%-55%. Big cities like Ankara and İstanbul seem to have problems in transportation services, while people in smaller cities have much higher satisfaction with transportation services.

Table 5. General statistics about HSR cities

	Population			Emp. Rate (2013)* %	Satisfaction w/ transportation service(2013)* %	Life Index Ranking (2015)*	Human Dev. Index (2013) **	HSR Passenger Arrivals (2016)*** x103
	2016	2023	Chan- ge Rate					
Current HSR Cities								
Ankara	5,325	5,927	16	45	71	17	2	2,354
Eskişehir	835	908	13	43	73	15	10	1,375
Bilecik	211	223	8	48	86	13	48	61
Sakarya	949	1,026	12	50	89	2	20	46
Kocaeli	1,765	1,984	18	49	73	23	6	172
İstanbul	14,864	16,569	16	46	69	5	1	779
Konya	2,104	2,175	5	46	88	18	8	1,104
Upcoming HSR Cities								
Bursa	2,839	3,073	12	48	83	19	5	---
Sivas	612	582	-6	45	82	40	36	---
Afyon	708	707	0	51	94	10	42	---
Manisa	1,362	1,371	2	53	91	31	21	---
Uşak	348	353	3	51	94	6	39	---
İzmir	4,138	4,405	9	47	77	21	3	---

\*The data were compiled from TurkStat (2016)

\*\*The source of the data is The Economic Policy Research Foundation of Turkey-TEPAV (2016).

\*\*\* The data source is Turkish State Railways (2017).

Life index rating which shows the overall rating for the cities considering residents, employment, income, health, education, environment, security, accessibility to infrastructure was obtained for current and upcoming cities (TurkStat, 2016). Among 81 Turkish cities, Sakarya was ranked as 2<sup>nd</sup> city and İstanbul was ranked as 5<sup>th</sup> city. The other index was Human Development Index which evaluates development in terms of health, education and income was also given in Table According to 2013 data, İstanbul and Ankara became the first two cities in terms of human development. Among the upcoming HSR cities, İzmir became the 3<sup>rd</sup> city followed by Bursa as 5<sup>th</sup> city.

### 4.3 Eskişehir as a HSR city

#### 4.3.1 Tourism in Eskişehir

Eskişehir is an attractive commercial, industrial and educational destination in the Central Anatolian Region of Turkey (Figure 2). It has become one of the most popular cities in Turkey and it is setting an example for other municipalities (Samkar & Alpu, 2013). The local administration is one of the most important actor in terms of shaping city image and improving the existing cultural and touristic attractions in the city (Tokay-Argan, 2016). In 2013, the city became the Turkish World Capital of Culture, a title given to the cities having a certain level of cultural heritage (Timur *et al.*, 2014; Tokay-Argan, 2016).

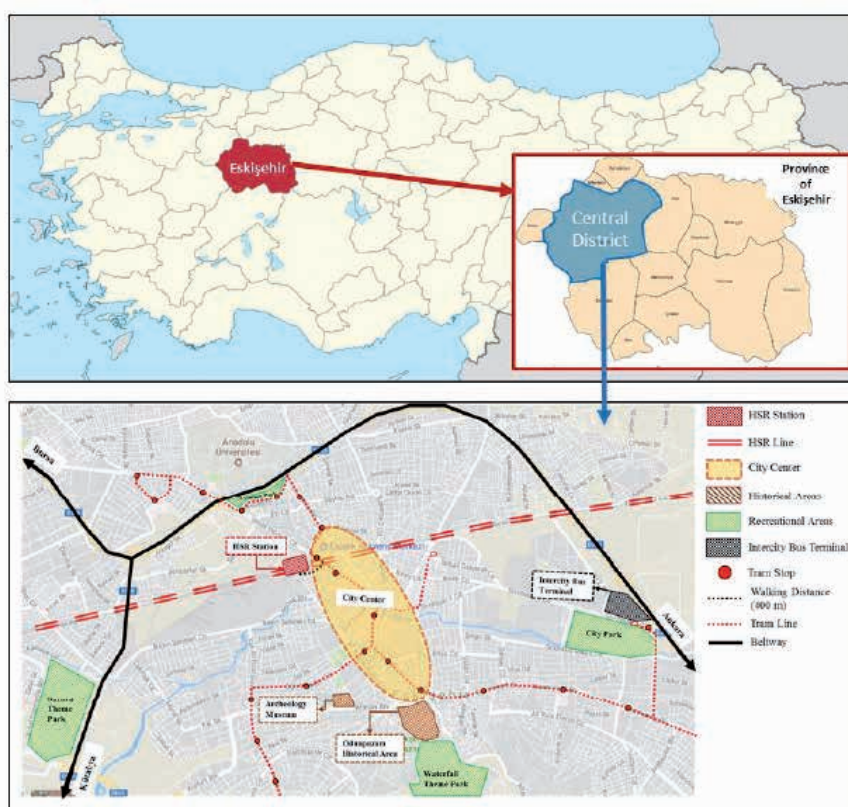


Figure 2. Location of tourist attractive places in Eskişehir

Eskişehir, with its historical and cultural fabric, economy, entertainment and nightlife, infrastructure (roads, communications, transport, etc.), shopping centres, recreational activities, housing, security, sports facilities, parks, services, traffic, medical facilities, restaurants, and green spaces, has the specialty of offering big city comforts in a small town. In Figure 2, a conceptual map showing the locations of attractive places in Eskişehir is given. One of the most attractive place in Eskişehir is Odunpazarı Historic Area which contains buildings with unique architecture constructed in the late period of the Ottoman Empire. The area was restored a few years ago and transformed into a living area with restaurants, boutique hotels and shopping places that attract tourists (Okumuş, 2013; Tokay-Argan, 2016). The city centre was also renewed and became attractive place in the recent years. In addition, there are a few big theme parks (The City Park, Science, Art, and Culture Park, Waterfall Park, etc.) constructed and opened for leisure activities, as well (see Image 1).

When considering tourism sector statistics, the province has much lower inputs compared to the existing potential (Sahin, 2012). However, according to the 2023 Turkey National Tourism Strategy Report, it is stated that a thermal tourism master plan will be prepared for the Phrygian region in which Eskişehir is also located and this region will be an important centre for health tourism (Ministry of Culture and Tourism, 2007). According to 2011 data, there are 55 accommodation facilities with 5603 bed capacity and the occupancy rate is around 40% for the years between 2008 and 2010.



Image 1. Some of the touristic places in Eskişehir a) Riverside in City Centre b) Odunpazarı Historical Area c) City Centre d) Sazova Theme Park

In a 2014 study conducted with domestic travellers, the destination of Eskişehir was described as a “student-university and cultural city” (Üsküdar et al., 2014, Tokay-Argan, 2016). In another study, ease of transportation, economic comfort, geographical proximity, existing of cultural places, parks and museums, having a social life and shopping options were found as the factors motivating people to visit Eskişehir (Oyman et al., 2010; Tokay-Argan, 2016). Another study showed that the factors affecting the development of tourism in Eskişehir were marital status, educational levels and income level. These factors caused differences in perception of problems: as the level of income increase, perceptions about the existence of problems increase. When the impact of HSR on Eskişehir was investigated, it was found that there has been an increase in daily trips due to the travel time saving provided by HSR (Seçilmiş, 2011).

Figure 3 shows the number of arrivals and stay overnights between 2007 and 2012, the HSR service having begun in 2009. There has been an increase in total number of visitors from 138,677 to 173,461 between 2007 and 2010, while foreign visitor number had some fluctuations in this period. However, 2012 data indicates that the total number of visitors decreased to 143,526. There has been a 35% increase in the total number of stay overnight between 2007 and 2010 (Akoğlan-Kozak et al., 2011). It decreased to 231, 515 in 2012. The number of stay overnight for foreign visitors increased to from 18,729 to 23,513 between 2010 and 2012. (Note: for Figure 3, 2007-2010 data was gathered from Akoğlan Kozak et al. (2011), 2012 data was compiled from Eskişehir Culture and Tourism Provincial Directorate (2012), and 2011 data is not available.)



### 4.3.2 Connectivity to HSR station

Due to its locations, Eskişehir is a railway hub, where both conventional trains (both passenger and freight locomotives) and HSR lines serve. Eskişehir Train Station is located at the city centre of Eskişehir, which is also combined with intercity bus service to Bursa, an upcoming HSR city (see Figure 2 and Image 2). For in-city transportation, there are taxi services and bus services close to station. Also, there is a tram stop 400 m walking distance.

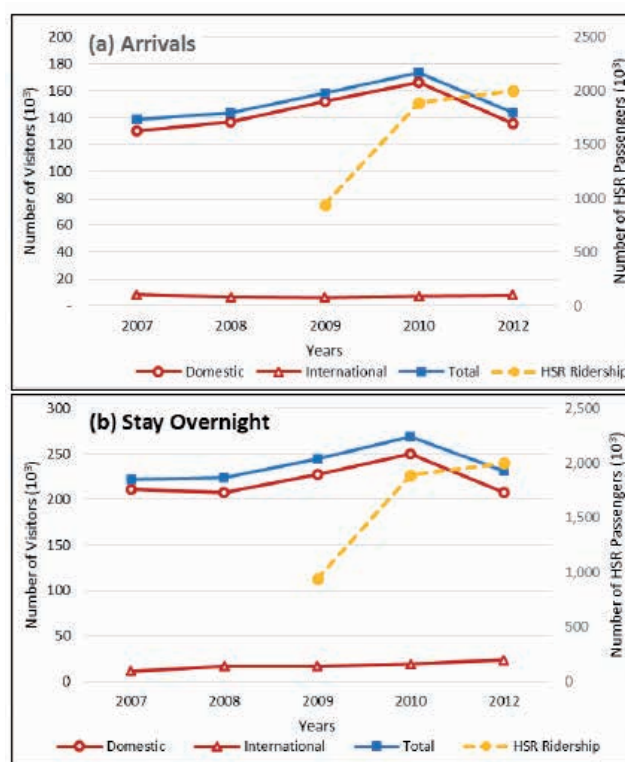


Figure 3. Number of arrivals and stay overnights for different years

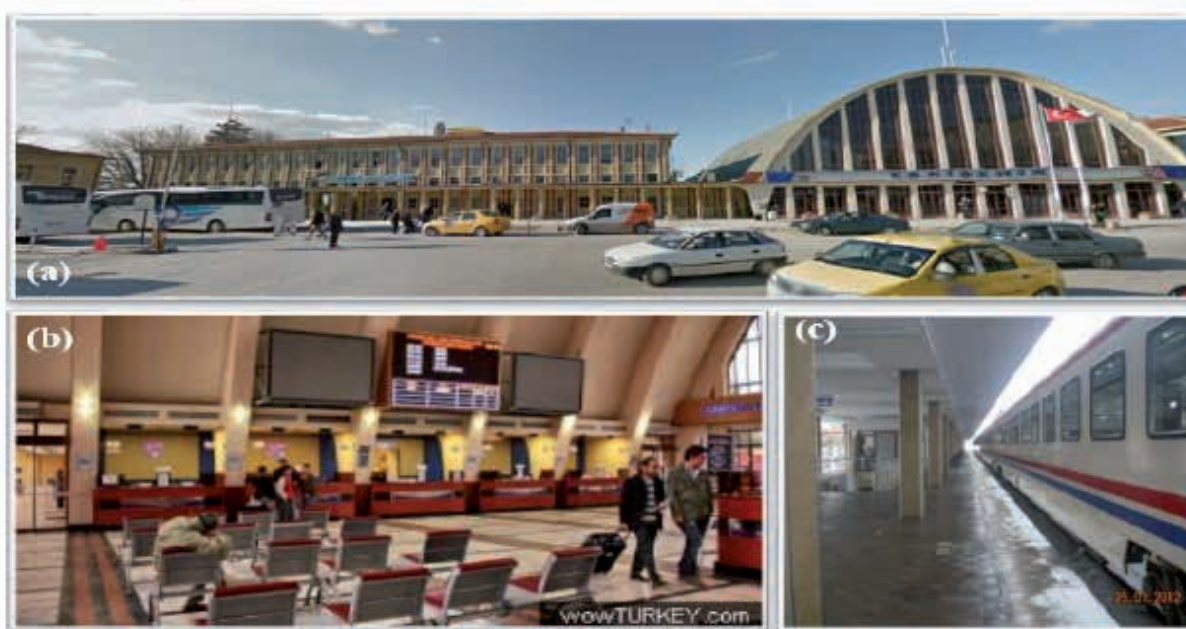


Image 2. Eskişehir train station a) outside view (showing the combined bus service stop), b) ticket offices c) railway platform





### 4.3.3 Observations during the technical trip to Eskişehir

A technical trip to Eskişehir started from the Eskişehir Railway Station on foot and included some touristic places in the city center, mainly around the Odunpazarı region, which revealed that the city had a good image and there were a lot of attractive places. Some other weaknesses were observed as lack of actively working tourist information centre and urban transportation information at train station (see Image 2).

While the tramway network is still in a developing stage, it connects the city centre to the most attractive places in the city such as Odunpazarı Historical Center, intercity bus terminal, universities, etc., though not the HSR station directly; the nearest tramway stop is located within 400 m walking distance (see Figure 2) and there are no directional signs leading HSR users to the city centre.

The Sazova Theme Park was visited, which was not accessible with public transportation service directly. However, there exists the Eskişehir Mobile City Guide, a smart phone application, which includes the location information on cultural places, museums, shopping places, universities, etc. is very comprehensive and informative. An interview with the Eskişehir Provincial Culture and Tourism Directorate revealed that HSR affected the urban economy and the number of daily visits increased after HSR started to operate.

## 4.4 Konya as a HSR city

### 4.4.1 Tourism in Konya

Konya is an important centre in terms of religious and culture tourism both in national and international level. It was the place where Rumi (or Mevlana), an important Persian-born Islamic scholar, lived most of his life. His tomb has become a place of pilgrimage today. The Whirling Dervishes perform once a year during the Mevlana Festival in every beginning of December. In 2005, the Mevlana Sama Ceremony in Konya was proclaimed by UNESCO as one of the Masterpieces of Oral and Intangible Heritage of Humanity (Egresi et al., 2012).

In addition to Mevlana Museum, there are a lot of historical places and recreation areas in Konya. Figure 4 shows the locations of attractive places and some of their photos are given in Image 3.

According to the information given by the Konya Provincial Culture and Tourism Directorate, Konya has further potential in health, congress, fair and meeting, nature, sport and hunting tourism as well (Konya Provincial Culture and Tourism Directorate, 2017, interview, 25/03/2017). Currently, Konya has 37 hotels (having 2-5 stars) with 3080 rooms and 6161 beds and 107 accommodation places with 2430 rooms and 5189 bed capacities. However, 12 hotels with 4769 beds have also received investment certificates.

In addition, World Trade Centre and Fair Exhibition area, which will have a conference room with 1000 seats, meeting halls, exhibition areas and restaurants, is in the planning phase. Also, there are 7 first class restaurants having investment certificate in the city (Konya Provincial Culture and Tourism Directorate, 2017).

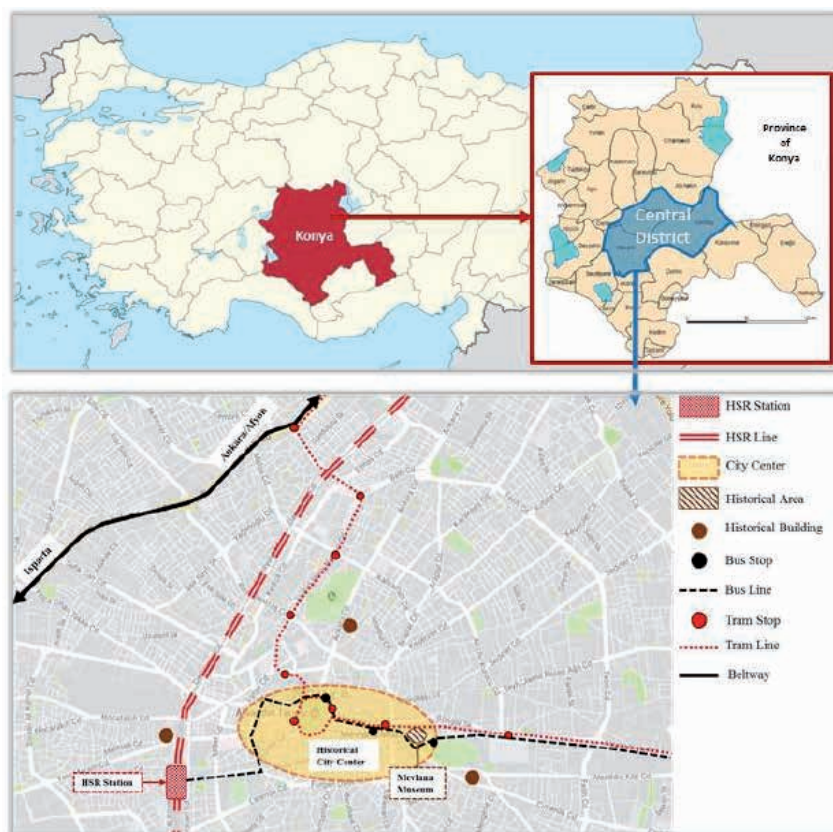


Figure 4. Location of tourist attractive places in Konya



Image 3. Touristic places in Konya a) Mevlana Museum Square b) Mevlana Museum c) Aleaddin Hill and Mosque d) City Centre.

The number of tourists visiting Konya<sup>1</sup> in Figure 5 showed a rapid increase in the number of visitors between 2007 and 2016 (HSR service to Konya begun in 2009). However, there are some fluctuations in the number of visitors in this period: In 2009, 2012, 2014 and 2016 years decreases in the number of visitors have been registered.

The interview with the city Tourism Directorate revealed potential reasons as economic and political situations. Moreover, after the application of Museum Card started in 2011, domestic and foreign visitor data could not be recorded separately. However, when the numbers of foreign tourists in the previous years were examined, it was seen that Konya had attracted tourists from the Republic of China, followed by Japan, Iran, United States and Germany in turn (Konya Provincial Culture and Tourism Directorate, 2017).

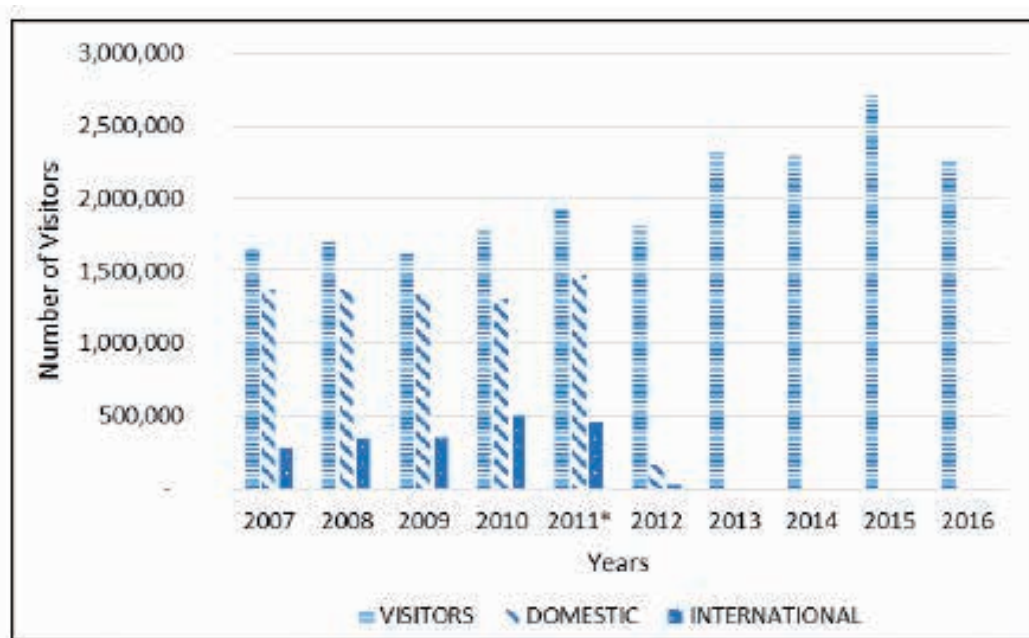


Figure 5. Number of Konya visitors by different years

\*As Museum Card application was started in 2011, domestic and international visitor data were not available after 2011.

Figure 6 shows the number of arrivals and stay overnights between 2011 and 2016, which showed an increase in both total and domestic values. Even though HSR ridership has increased between 2011 and 2014, decrease in the ridership was observed in 2015 and 2016. When the monthly distribution visitors is examined for 2016 shown in Figure 7, it is seen that the number of arrivals and stay overnights increased in March, August, October and December months.

At the beginning of October, there is an annual event called as “International Mystic Music Festival” which attracts more domestic and foreign tourists. Also, Mevlana Sama Ceremonies that are realized in every beginning of December could be a reason for the increase in the number of visitors in December period. Even though, a relationship between HSR passenger arrival and visitor numbers was not observed in the first half of the year, in the second half, it seems that there is a parallel relationship between them.

<sup>1</sup> The data included the number of tourists visiting museums and cultural places such as Mevlana Museum, Karatay Museum, etc.

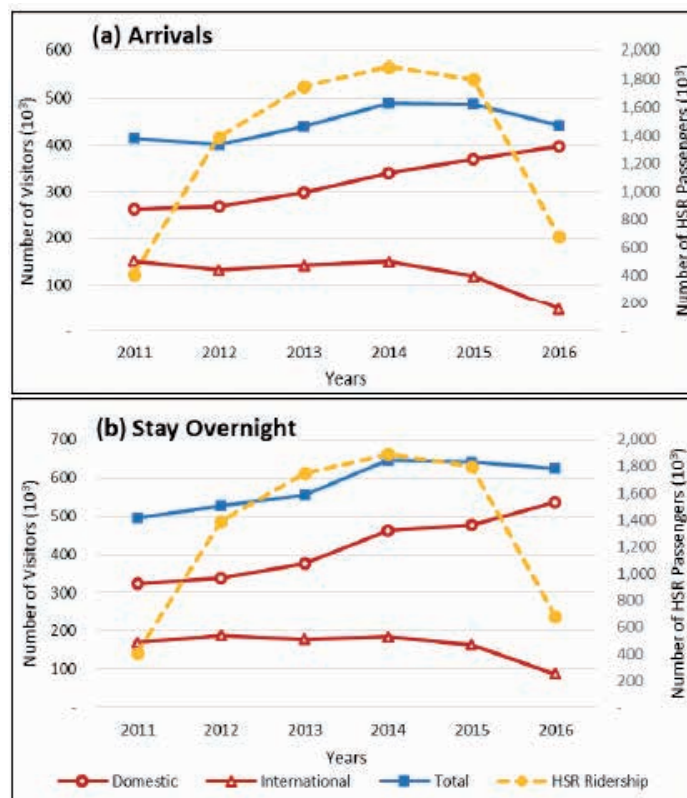


Figure 6. Number of Konya Visitors and ANK-KON HSR Ridership a) Arrivals, b) Stay overnight

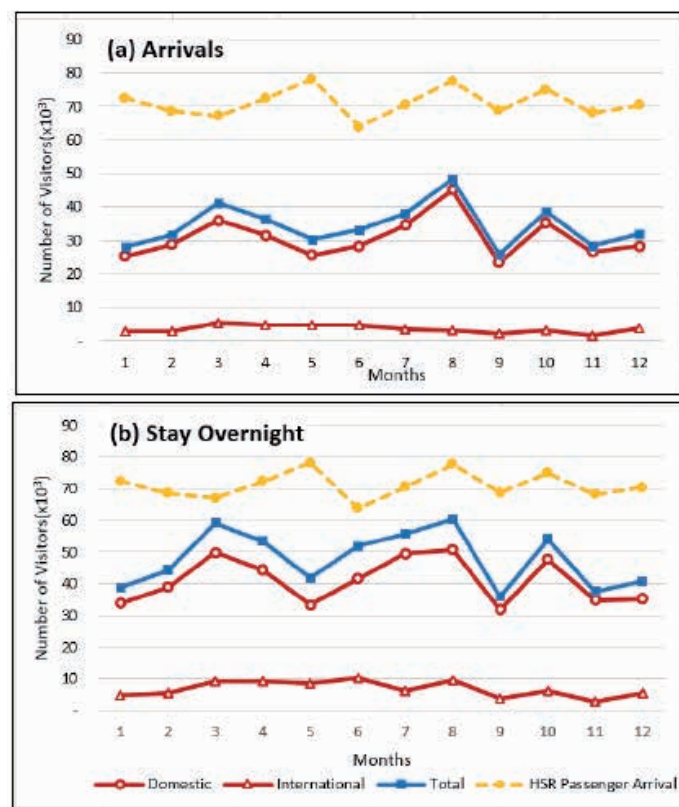


Figure 7. Monthly Distribution of Visitors and HSR Passenger Arrivals to Konya in 2016 a) Arrivals, b) Stay overnight



#### 4.4.2 Connectivity to HSR Station

Currently, there are two HSR lines served at Konya HSR Station, ANK-KON and KON-IST. Konya station is located relatively close to the city centre (around 2 km away). Konya train station serves both HSR (12 departures and 12 arrivals per day) and conventional railways (passenger and freight locomotives). In a study on the regional impacts of HSR, it was determined that 23% of the passengers traveling with Ankara-Konya HSR had tourism purposes. Also, it was stated that people living in Ankara mostly travel to Konya for touristic purposes (MEVKA, 2012). Photos of Konya Train Station are given in Image 4. As it was stated before, there are combined HSR services with intercity busses and their stop is in front of the station for the passengers going Karaman and Alanya (see Image 4a). Also, there is an in-city bus stop in front of the station that provides direct accessibility to city centre (Image 4d).



Image 4. Konya train station a) outside view (showing the intercity buses combined with HSR), b) outside view, c) railway platform d) public bus stop in front of the station

#### 4.4.3 Observations during the technical trip to Konya

During the Konya technical trip, it was observed that tourist information centre located in Konya Railway Station (see Image 5a) and there is bus stop in front of the station that provide direct access to the city center. There is also a shared bicycle system (see Image 5b). Moreover, Konya Metropolitan Municipality's smart phone application was found as quite useful that provides information on touristic places, transportation alternatives, public transportation stops, municipal services etc.



Image 5. Photos of a) tourism Information office in rail station (b) and bike-sharing system in Konya city centre



#### 4.5 Some recommendations concerning HSR and tourism expansion in Turkey

As a result of the first observations made during the technical trips and the analysis of the literature, some recommendations can be put forward to develop tourism by HSR.

First of all, due to the newness of HSR in Turkey, communications concerning its possible use for tourism purpose should be provided in rail stations and airports.

Second, in HSR stations, wireless internet (wi-fi) access should be provided for tourists and in particular for foreign tourists, and tourist information offices and souvenir shops should actively work.

Third, in trains, images related to the touristic areas in the city should be presented on the TV and activities should be done in parallel with the urban identity, information about intra-city transportation should be presented.

Fourth, in order to provide intermodality with in-city transportation options, information about the public transportation should be presented in front of the station and walkways should be provided with visible signs. Walkability of stations should be assessed within 500 m and bicycle sharing options should be evaluated. Also, HSR station and intercity bus terminal connections should be strengthened and combined ticketing options should be increased.

Fifth using intelligent transportation systems, integration of HSR ticket with conventional train and urban transportation tickets can be realized. Also, HSR ticket, other transportation tickets and Museum Card system might be integrated in a single pass with certain discounts for activities in the city. In addition, intelligent shuttle/taxi service might be provided with the provision of prepaid systems (online payment systems, the shortest route representation, etc.).

#### 5. Conclusions

The comfort and the travel time saving provided by the HSR services might contribute to tourism sector (especially daily tourism), as well as attractiveness of the cities. But the literature review shows that the link between HSR and tourism is not systematic. Some conditions are required such as touristic resources, intermodality at the rail station, and local policies. In Turkey, HSR is a newly introduced transportation mode, which has a network developed branching out from Ankara (ANK), the capital city, first to the two nearby cities, Eskişehir (ESK) and Konya (KON). While the network further reached Istanbul, the biggest city in Turkey, and is planned to reach İzmir and Bursa, two major city in Turkey, the biggest share of the current ridership comes from ANK-ESK and ANK-KON lines, which were chosen for major reductions in travel times. Majority of the travels in these lines was for tourism purposes (vacation, family/relative visits, etc.).

Though not measured in detail, HSR has started to affect both the service and tourism sectors, especially in Eskişehir and Konya. When basic tourism statistics for Eskişehir and Konya were evaluated, it was seen that the daily trips made to these cities increased as well as the tourism arrivals. But to measure the contribution of HSR to tourism more clearly and to determine the applications that can be made to increase this contribution further, more detailed researches must be conducted on these cities, but also on the other upcoming HSR cities. These researches are expected to shed light for the HSR services for the upcoming HSR lines in Turkey and in the other developing countries.



## 6. References

- ALBALATE, D., CAMPOS, J., JIMENEZ, J-L. (2015). Tourism and high speed rail in Spain: Does the AVE increase local visitors? Technical Report, December.  
<http://www.researchgate.net/publication/288604283> [Accessed 24 April 2016].
- ALBALATE, D., BEL G. (2010). High-Speed Rail: Lessons for policy makers from experiences abroad. Research Institute of Applied Economics Working Paper,03, 34.
- ALBALATE, D., FAGEDA, X. (2016) High speed rail and tourism: Empirical evidence from Spain, Transportation Research Part A, 85, pp.174-185.
- ALONSO, M., BELLET, C. (2009). El tren de alta velocidad y el proyecto urbano. Un nuevo ferrocarril para la Zaragoza del tercer milenio”, in “Scripta nova. Revista electrónica de geografía y ciencias sociale. Barcelona: Universidad de Barcelona, 13, 281.
- AMIARD D. (1997). Le tourisme d’affaire et de Congrès dans l’agglomération mancelle Dans Chevalier, Jean (sous la direction de), Le Mans 6 ans après l’arrivée du TGV, groupe de recherche en géographie sociale, ESO - Espaces géographiques et Sociétés, Université du Maine, Le Mans.
- AGENCE D’URBANISME RÉGION DE REIMS (AUDRR) (2012) TGV Est Approche des impacts socio- économiques sur Reims et sa région. Paroles d’acteurs. Mai  
[\[www.audrr.fr/centre\\_ressources/publication/paroles-d-acteurs-tgv-est.html\]](http://www.audrr.fr/centre_ressources/publication/paroles-d-acteurs-tgv-est.html)
- BABALIK-SUTCLIFFE, E. (2007). Pro-rail policies in Turkey: A policy shift. Transport Reviews: A Transnational Transdisciplinary Journal, 27(4), pp.485-498.
- BAZIN-BENOIT, S., BECKERICH, C., DELAPLACE, M. (2013a). Desserte TGV et villes petites et moyennes, une illustration par le cas du tourisme à Arras, Auray, Charleville-Mézières et Saverne. Les Cahiers Scientifiques du Transport, 63, pp. 33-62.
- BAZIN S., BECKERICH C., DELAPLACE M. (2011). High Speed Railway, Service Innovations and Urban and Business Tourisms Development, Chapitre 4 In SARMENTO Manuela, & ALVARO Matias Economics and Management of Tourism: Trends and Recent Developments. Collecção Manuais, Universidade Luisiada Editora, Lisboa, Portugal.
- BAZIN-BENOIT, S., BECKERICH, C., DELAPLACE, M. (2010). Grande vitesse, activation des ressources spécifiques et développement du tourisme urbain: Le cas de l’agglomération rémoise. Belgeo, 1-2, pp. 65-78.
- BAZIN S., BECKERICH C., BLANQUART C., DELAPLACE M. (2013b). Les enjeux et opportunités des dessertes ferroviaires à grande vitesse en matière de développement local et de développement durable, rapport final, Contrat PREDIT, financement ADEME, mai, 186p.
- Bazin S., Beckerich C., Delaplace M. (2014). Valorisation touristique du patrimoine et dessertes TGV dans les villes intermédiaires à moins d’1h30 de Paris: les cas de Reims”, Metz, Le Mans et Tours. Revue d’économie Régionale et Urbaine, 5, pp. 5-23.
- BAZIN S., BECKERICH C., DELAPLACE M. (2013a). Desserte TGV et villes petites et moyennes, Une illustration par le cas du tourisme à Arras, Auray, Charleville-Mézières et Saverne. Les Cahiers Scientifiques du Transport, 63, pp.33-62.

- BAZIN-BENOIT S., DELAPLACE M. (2015). Mise en service des dessertes TGV et gouvernance dans le domaine du tourisme: le cas de villes françaises. *Revue Géographique de l'Est*, 55(3- 4)
- BONNAFOUS, A. (1987). The regional impact of the TGV", *Transportation*, 14(2), pp. 127-137.
- BUTTET ET AL.,(2001) Impact de l'arrivée du TGV sur la ville de Tours. Rapports d'atelier, Magistère 2ème année, CESA.
- CELIKKOL-KOCAK, T., DALKIC, G., TUYDES-YAMAN, H.(2017). High-Speed Rail (HSR) users and travel characteristics in Turkey. *Procedia Engineering*, 187, pp. 212 - 221.
- CHEN, Z., HAYNES, K. E. (2012). Tourism industry and High Speed Rail - Is there a linkage: Evidence from China's High Speed Rail development. *GMU School of Public Policy Research Paper No. 2012-14*. Available at SSRN:  
<https://ssrn.com/abstract=2130830> or <http://dx.doi.org/10.2139/ssrn.2130830>
- CHEN Z., HAYNES K. E. (2014). Impact of high-speed rail on international tourism demand in China, *Applied Economics Letters*, 22(1), 57-60, DOI: 10.1080/13504851.2014.925043
- CHEN X. (2013). Assessing the impacts of High Speed Rail development in China's Yangtze River Delta Megaregion. *Journal of Transportation Technologies*, 3, pp. 113-122.
- CHENG, Y-H. (2009). High-speed rail in Taiwan: New experience and issues for future development. *Transport policy*, 17(2), pp.51-63.
- CORONADO J-M., GARMENDIA M., MOYANO A., UREÑA J-M. (2013). Assessing Spanish HSR network utility for same-day tourism, *Rechs. Transportation Security*, 29, pp.161-175.
- Comité Régional du Tourisme (CRT) Provence Alpes Côte d'Azur (PACA), « Modes de transport et Tourisme en Provence-Alpes-Côte d'Azur », Observatoire du Tourisme, CSEF.(2005). La gare TGV : quels impacts sur l'emploi à Liège ? Compte-rendu d'une table ronde organisée par le CSEF de Liège,  
[http://csefliege.org/Analyse\\_du\\_marche\\_de\\_l\\_emploi\\_et\\_de\\_la\\_formation/Synthese%20TGV.pdf](http://csefliege.org/Analyse_du_marche_de_l_emploi_et_de_la_formation/Synthese%20TGV.pdf)
- DALKIC G. (2014). High Speed Rail development in Turkey: Government policy, investments and users perspective, Master Dissertation, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Ankara, Turkey.
- DELAPLACE M.; PERRIN J. (2013). Multiplication des dessertes TGV et Tourismes urbains et d'affaires, Regards croisés sur la Province et l'Ile de »rance", *Recherche Transport et Sécurité*, 29, pp. 177-191.
- DELAPLACE M., BAZIN-BENOIT, S. (2017). High-speed rail services and tourism expansion: The need for cooperation, in ALBALATE D. and BEL G. Eds. "Evaluating High Speed Rail" *Routledge studies in transport analysis*, pp. 69-81
- DELAPLACE M., PAGLIARA, F., PERRIN, J., MERMET, S. (2014). Can High Speed Rail foster the choice of destination for tourism purpose? *Procedia - Social and Behavioral Sciences*, EWGT2013 - 16th Meeting of the EURO Working Group on Transportation.



- DELAPLACE M., PAGLIARA F., LA PIETRA A. (2016). Does High-Speed rail affect destination choice for tourism purpose? Disneyland Paris and Futuroscope case studies? *Belgeo*, 3.
- DELAPLACE, M. (2012). Pourquoi les « effets » TGV sont-ils différents selon les territoires ? L'hétérogénéité au cœur du triptyque « Innovations, Territoires et Stratégies ». *Recherche Transports et Sécurité*, 28, pp.290-302.
- EGRESI I., BAYRAM, B., KARA, F., KESİK, O. A. (2012). Unlocking the potential of religious tourism in Turkey. *GeoJournal of Tourism and Geosites*, 1(9).
- ESKİŞEHİR CULTURE AND TOURISM PROVINCIAL DIRECTORATE (2012), Tourism Statistics, Available at:  
<http://www.eskisehirkulturturizm.gov.tr/TR,149875/istatistikler.html>. Accessed date: 20/05/2017.
- AKOĞLAN KOZAK, M., KILIÇLAR, A., SARI, Y., KAŞLI, M., SEÇİLMİŞ, C., ÇİÇEK, D., ZENCİR, E. (2011), Eskişehir Tourism Master Plan 2011-2015, Eskişehir: Anadolu University, Eskişehir, Turkey.
- FAYE M. (1998). Tours à la conquête du tourisme d'affaires. *Norois*, 178, pp. 293-300.
- GUIRAO B., CAMPA J-L. (2015). The effects of tourism on HSR: Spanish empirical evidence derived from a multi-criteria corridor selection methodology. *Journal of Transport Geography*, 47, pp. 37-46.
- HAYNES K.E. (1997) Labor markets and regional transportation Improvements: The case of High Speed Trains. An introduction and review. *The annals of regional science*, Vol.31, N°1, pp. 57-76.
- INSEE LORRAINE. (2009). La ligne à Grande Vitesse Est-européenne : une évaluation de l'impact sur le tourisme. *INSEE Lorraine*. 163, 6p.
- KONYA CULTURE AND TOURISM PROVINCIAL DIRECTORATE. (2017). Interview in 23/03/2017.Konya, Turkey.
- KURIHARA, T., WU, L. (2016). The impact of High Speed Rail on tourism development: A case study of Japan, *The Open Transportation Journal*, 10, (Suppl-1, M4), pp.35-44.
- LEVINSON DAVID M. (2012). Accessibility impacts of high-speed rail. *Journal of Transport Geography*, 22, pp. 288-291.
- LUMSDON, L. AND PAGE, S. J. (2004). Progress in transport and tourism research: reformulating the transport-tourism interface and future research agendas in Lumsdon, L.; (eds) *Tourism and transport: issues and agenda for the new millennium*, Oxford, Elsevier, pp.1-27.
- MANNONNE V. (1995). L'impact régional du TGV sud-est, Thèse pour l'obtention du doctorat de géographie, 2 tomes, Université de Provence Aix-Marseille.
- MASSON S.; PETIOT R. (2009). Can the high speed rail reinforce tourism attractiveness? The case of the high speed rail between Perpignan (France) and Barcelona (Spain). *Technovation*, 29(9), pp. 611-617.
- MEVLANA DEVELOPMENT AGENCY-MEVKA. (2012). The impact of HSR on regional development, Technical Support Program of MEVKA 2011. Konya, Turkey.

- MINISTRY OF CULTURE AND TOURISM. (2017). Tourism Statistics, Available at:  
<http://yigm.kulturturizm.gov.tr/TR,9851/turizm-istatistikleri.html>. Accessed date:  
20.05.2017.
- MINISTRY OF DEVELOPMENT. (2014). The tenth development plan. Ankara, Turkey.
- MIZOHATA Y. (1995), "L'impact du Shinkansen sur les villes: Le cas du Shinkansen du Tohoku", in Centre Jacques Cartier, Patier Danièle (Eds). Villes et TGV : Actes des sixièmes Entretiens Jacques Cartier 8-10 Décembre 1993, Lyon, France : LET. 330 p. (Études et Recherches, n° 6), pp. 277-280
- Ministry of Transportation, Maritime and Communication (2016), National Transportation Portal. <https://www.ulasim.gov.tr/>
- OKABE, S. (1980). Impact of the Sanyo Shinkansen on local communities. Straszak A. and Tuch R. (ed), The Shinkansen High-Speed Rail Network of Japan, Pergamon Press, pp. 105- 129.
- OKUMUŞ, E. (2013). Odunpazarı Evleri'nde Ramazan Gecelerinde Boş Zaman Mekânları. Eskişehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi. 14, pp. 103-140.
- OYMAN, M., Yılmaz, H., & Kutlu, Ö. (2010). Motivations for visiting heritage sites: The case of Eskişehir. The International Journal of The Humanities, 8(6), 131-145.
- PAGLIARA F., DELAPLACE M., VASSALO J.M. (2014). High-speed trains and tourists: what is the link? Evidence from the French and Spanish capitals. Urban Transport XX, 17.
- PAGLIARA F., DELAPLACE M. AND VASSALLO J.M. (2015). High-speed rail systems and tourists' destination choice: The case studies of Paris and Madrid. The International Journal of Sustainable Development and Planning, 10 (3), pp. 399-410.
- PAGLIARA F. (2014). High Speed Rail systems. impacts on mobility, on tourism and on mobile workers. LAP Lambert Academic Publishing, Saarbrücken, Germany.
- People's Republic of China. (2014). Regional Economic Impact Analysis of High Speed Rail in China, Main Report June 25, Document of the World Bank.
- ŞAHİN F. (2012). Eskişehir ilinin kültür turizmi potansiyeli: mevcut durum ve öneriler, Uzmanlık Tezi, Kültür ve Turizm Bakanlığı Eskişehir Kültür Varlıklarını Koruma Bölge Kurulu Müdürlüğü.
- SALADIÉ O., ANTON CLAVÉ S., GUTIÉRREZ A. (2016). Measuring the influence of the Camp de Tarragona high-speed rail station on first-time and repeat tourists visiting a coastal destination. Belgeo, 3.
- SAMKAR, H., ALPU, O. (2013). M regression approach for satisfaction of municipality services: The case of Eskişehir. Quality and Quantity, 47(3), pp.1629-1637.
- SANDS B. D. (1993). The development effects of High-Speed Rail stations and implications for California, Institute of Urban and Regional Development University of Berkeley, working paper, <http://www.uctc.net/papers/115.pdf>
- SEÇİLMİŞ, C. (2011). The problems that affect the development of Eskişehir's tourism from the visitors' perspective, İşletme Araştırmaları Dergisi, 3(3),pp. 37-57





- TEPAV--The Economic Policy Research Foundation of Turkey. (2016). Türkiye’de insani gelişmişlik iller arasında nasıl farklılaşıyor? 81 il için insani gelişmişlik endeksi, Turkey.
- TIMUR, M. N., ÇEVİK, S., & KICIR, G. K. (2014). Etkinlik turizmi: kültür başkenti etkinliklerinin başarı unsurları üzerine bir değerlendirme. Akademik Sosyal Araştırmalar Dergisi, 2(2/1), pp. 56-83.
- TODOROVICH P., SCHNED D., LANE R. (2011). High-Speed Rail international lessons for U.S. policy makers. Policy Focus Report Series, Lincoln Institute of Land Policy
- TOKAY-ARGAN, M.(2016). Eskişehir, Turkey as a crossroads for leisure, travel and entertainment. Cities 56, pp. 74-84.
- Tourisme- Alsace (2009). Le bilan après 2 ans de TGV Est en Alsace, Tourism Regional Council of the Alsace region,  
<http://www.clicalsace.com/fr/thematique/offre-et-frequentation/impact-du-tgv-est-sur-les-activites-touristique-apres-2-ans>, [Accessed 15.01.2016].
- TURKISH STATE RAILWAYS. (2016). Annual Statistics 2011-2015. Ankara, Turkey.
- TURKISH STATE RAILWAYS. (2017a). Annual Statistics 2012-2016. Ankara, Turkey.
- TURKISH STATE RAILWAYS. (2017b). Customer Satisfaction Survey Evaluation Report. Ankara, Turkey.
- TURKISH STATISTICAL INSTITUTE. (2016). Annual Population Statistics, Accessed from the web site: [http://www.tuik.gov.tr/PreTablo.do?alt\\_id=1027](http://www.tuik.gov.tr/PreTablo.do?alt_id=1027)
- TURKISH STATISTICAL INSTITUTE. (2016). Life Satisfaction Research, Accessed from the web site: <http://www.tuik.gov.tr/UstMenu.do?metod=temelist>
- TURKISH STATISTICAL INSTITUTE (2016). Basic Statistics, Accessed from the Web site: <http://www.turkstat.gov.tr/Start.do;jsessionid=GT2VZmTLkTmnv25sGr-MhyWldG6Zw5Dh6grTJ2gzWSJx2j3hrRH2p!-1124279051>
- URENA J.; MENERAULT P., GARMENDIA M. (2009), The high-speed rail challenge for big intermediate cities : a national, regional and local perspective, Cities, Vol. 26, n° 5, pp. 266- 279
- ÜSKÜDAR, Ş., ÇAKIR, M., TEMİZKAN, S. P. (2014). Yerli Turistlerin Eskişehir’in Kültür Turizmine İlişkin Algıları (the perception of domestic tourists regarding Eskişehir’s cultural tourism). Journal of Tourism and Gastronomy Studies, 2(2), pp. 67-76.
- VALERI E., PAGLIARA F., MARCUCCI E. (2012). A destination choice model for tourism purpose. ASRDLF 2012 conference special session on High Speed Rail, Tourism and Territories, 9th-11th July, Belfort, France
- VICKERMAN R., ULIED A. (2006), Indirect and wider economic impacts of high-speed rail  
<http://163.117.2.172/temp/agenda/mad2006/papers/12.%20Vickerman,%20Roger.pdf>

- VILLE DE MARSEILLE. (2011). Le tourisme made in Marseille, Direction de la communication.
- WANG X., HUANG S., ZOU T., YAN H. (2012). Effects of the high speed rail network on China's regional tourism development. *Tourism Management Perspectives*, 1, pp.34-38.
- WORLD TRAVEL TOURISM COUNCIL (WTTC). (2015). *Travel & Tourism: Economic Impact 2015*, Turkey.
- ZHAO, D. (2012). The High-Speed Railway network in Yangtze River Delta: an analysis of the accessibility impact.

<http://www.regionalstudies.org/conferences/presentations/european-conference-2012-best-international-paper-early-career> [accessed 15 February 2016]

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