

**REPUBLIC OF TURKEY
BAHÇEŞEHİR ÜNİVERSİTESİ**

**FINANCIAL ANALYSIS AND BANKRUPTCY
PREDICTION USING ALTMAN Z-SCORE
MODEL: A CASE STUDY OF COASTAL
HOTEL MANAGEMENT COMPANIES IN
TURKEY**

Master Thesis

CİHAN KIRAN

İSTANBUL, 2020

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BAHÇEŞEHİR ÜNİVERSİTESİ**

**GRADUATE SCHOOL OF SOCIAL SCIENCE
MASTER OF BUSINESS ADMINISTRATION**

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Thesis Supervisor: ASSIST. PROF. DR. SONAT BAYRAM

İSTANBUL, 2020

ACKNOWLEDGEMENTS

First of all, I would like to thank my wife Z. Deniz Ünsoy Kıran, my mother Sebahat Kıran, my father Kadir Kıran, my brother Şahin Kıran, my friends Serhat Aydoğdu, Ertan Önal, Şirin Önal, Abdullah Sağlam and Serkan Kaykusuz for all the supports they have given me to all my life.

I would like to express my deepest gratitude to my advisor, Assist. Prof. Dr. Sonat Bayram, for his excellent caring, patience, and providing me with guiding my research.

I would also want to thank my colleagues Yapı ve Kredi Bankası A.Ş. team. They were always supporting me and encouraging me with their best wishes in this process.

I would also want to thank people who are hotel owners or agency owners in coast hotel management sector in Turkey. They were always teaching me and encouraging me with their best wishes in this process.

I hope this thesis can be helpful and useful for further study.

ABSTRACT

FINANCIAL ANALYSIS AND BANKRUPTCY PREDICTION USING ALTMAN Z- SCORE MODEL: A CASE STUDY OF COASTAL HOTEL MANAGEMENT COMPANIES IN TURKEY

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Master of Business Administration

Thesis Supervisor: Assist. Prof. Dr. Sonat Bayram

Jun 2020, 85 Pages

The tourism sector in the world attracts attention as an important sector in terms of country incomes. Although it based on centuries-old history of the development of the world tourism sector, the tourism sector in Turkey is seen as a newly developing sector. The restructuring period for the tourism sector began after the 1980s and became one of the most important sectors providing foreign exchange income for Turkey with increasing income and number of tourists. The tourism sector in terms of providing foreign currency revenues, is a direct impact on the Turkey's current account deficit. The tourism sector has become increasingly important as a sector year by year. Additional investments are made every year for the tourism sector, which directly contributes to the national economies, and with the employment it provides, it continues to contribute in increasing amounts directly or indirectly in the national economies. In this study, the historical development of the tourism sector in Turkey, and general information about the industry structure is to be shared, as well as credit ratings out of financial ratios for the last four periods of the companies operating in the coast hotel management which is one of the

dynamics of the tourism sector and comments will be made. The study consists of three main sections. In the first part, the general structure of the tourism sector, its historical development, the general analysis of the coast hotel management sector and the perspective of the sector will be examined. In the second part, general information on credit rating will be shared and information about credit rating models will be shared. In the third part, information on the ratios of the companies operating in the coastal hotel management sector in the tourism sector will be shared, financial ratios of companies will be utilized, and Altman Z-Score model and an evaluation scale developed based on correlation method will be used to analysis and criticize.

Keywords: Tourism, Coast Hotel Management, Antalya, Altman Z-Score Model.

ÖZET

ALTMAN Z-SCORE MODELİ İLE İFLAS TAHMİNİ VE FİNANSAL ANALİZ: TÜRKİYE'DE SAHİL OTELCİLİĞİ İŞLETMELERİ ÜZERİNE BİR VAKA ANALİZİ

Cihan Kıran

İşletme Yüksek Lisans Programı

Tez Danışmanı: Assist. Prof. Dr. Sonat Bayram

Haziran 2020, 85 sayfa

Dünya üzerinde turizm sektörü ülke gelirleri açısından önemli bir sektör olarak dikkat çekmektedir. Dünya üzerinde turizm sektörünün gelişimi asırlık geçmişe dayansa da Türkiye'de turizm sektörü yeni yeni gelişmekte olan bir sektör olarak görülmektedir. 1980'lerden sonra turizm sektörü için yapılanma dönemi başlamış olup, artan gelir ve turist sayısı ile yıllar itibariyle önem arz eden ve ülkeye döviz geliri sağlayan en önemli sektörlerden biri haline gelmiştir. Turizm sektörü döviz geliri sağlaması açısından, Türkiye'nin cari açığına doğrudan etki etmekte olup, yıllar itibariyle önemi artan bir sektör konumuna gelmiştir. Ülke ekonomilerine doğrudan katkı sağlayan turizm sektörü için her yıl ilave yatırımlar yapılmakta olup, sağladığı istihdam ile de ülke ekonomilerinde doğrudan veya dolaylı olarak her yıl artan miktarlarda katkı sağlamaya devam etmektedir. Bu çalışmada, turizm sektörünün Türkiye'deki tarihsel gelişimi ve sektör yapısı hakkında genel bilgiler paylaşılmış olup, ayrıca turizm sektörünün dinamiklerinden biri olan sahil otelciliği konusunda faaliyet gösteren firmaların son 4 dönemdeki finansal rasyoları üzerinden kredi derecelendirmeleri ve yorumları yapılmıştır. Çalışma üç ana bölümden oluşmaktadır. İlk bölümde turizm sektörünün genel yapısı, tarihsel gelişimi, otel işletmeciliği sektörünün genel analizi ve sektöre bakış açısı

incelenmiştir. İkinci bölümde kredi derecelendirme üzerine genel bilgi paylaşılmış ve araştırma yapılacak modele ilişkin tanımlamalar paylaşılmıştır. Üçüncü bölümde ise, turizm sektöründe sahil otelciliği konusunda faaliyet gösteren firmalara ait rasyoların neler olduğu bilgisi paylaşılmış, çalışmada kullanılacak rasyoların genel tanıtımı yapılmış ve kredi derecelendirme metodlarından Altman Z-Score modeli ve korelasyon temelli geliştirilen değerlendirme ölçeği üzerinden finansal rasyolar kullanılarak yorumlamalar yapılmıştır.

Anahtar Kelimeler: Turizm, Sahil Otel İşletmeciliği, Antalya, Altman Z-Score Modeli.



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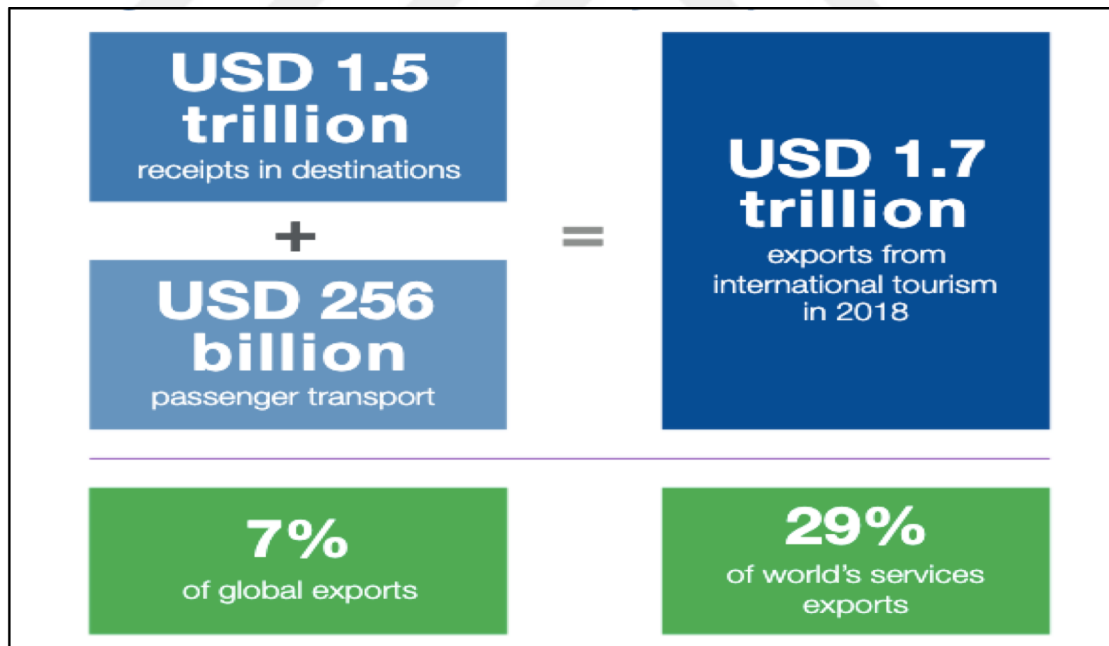
ABBREVIATIONS

TR	: Turkey (Country)
TRY	: Turkish Lira (Currency of Turkish Economy)
UNWTO	: World Tourism Organization
TUROB	: Hotel Association of Turkey
TUROFED	: Turkish Hoteliers Federation
TURSAB	: Association of Turkish Travel Agencies
WTTC	: The World Travel & Tourism Council
WTO	: World Trade Organization
TUIK	: Turkish Statistical Institute
TTYD	: Turkish Tourism Investors Association
EUR	: EUR (European Currency)
USD	: American Dollars
GDP	: Gross Domestic Product
EBITDA	: Earnings Before Interests, Taxes, Depreciation and Amortization
EBIT	: Earnings Before Interests, Taxes
LTV	: Loan To Value
TOBB	: The Union of Chambers and Commodity Exchanges of Turkey

1. INTRODUCTION

In World Economy, despite current corona virus Covid-19 shock in tourism industry in 2020 and the sector is seriously affected in crisis, with the effect a growing middle class in emerging economies, technological advances, new business models, affordable travel costs and visa facilitation, international tourist arrivals increased with 5% in 2018 (UNWTO, 2019, pp. 1-24). Moreover, export earnings generated by tourism have grown to USD 1.7 trillion and growth in international tourist arrivals and receipts continues to outpace the world economy and both emerging and advanced economies are benefiting from rising tourism income. The shares of tourism sector in global exports and world's services exports as of 2018 year-end are also given below in Picture 1 and USD 1,7 trillion exports from international tourism in 2018 (UNWTO, 2019, pp. 1-24);

Figure 1.1: The shares of tourism sector in global exports and world's services exports as of 2018 year-end



Source: World Tourism Organization (UNWTO) and World Trade Organization (WTO).

The tourism industry, which has been growing and developing after World War II, has become one of the biggest sectors in the world in terms of economy. Due to the importance of tourism sector, it became one of the major sector in Turkey, especially with

the influence of the Ministry of Tourism and Promotion, founded in 1963. With every year new hotels were constructed and capacity of tourism sector had been increased year by year in Turkey. The table belonging to Ministry of Culture and Tourism related to tourism statistics which is a general evaluation of 2019-year end is given below as Table 1 and the table shows how the number of facilities and bed capacity of tourism sector increase rapidly between the years of 2002-2019;

Table 1.1: Changes of number of bed capacities and facilities between 2002-2019

Year	# of facilities	# of beds
2002	9.896	804.153
2003	9.877	820.061
2004	9.871	846.872
2005	9.906	875.668
2006	9.970	899.970
2007	9.587	931.372
2008	9.630	965.154
2009	9.740	1.001.054
2010	11.832	1.156.277
2011	11.676	1.173.706
2012	11.858	1.218.481
2013	12.178	1.247.027
2014	12.313	1.300.361
2015	12.476	1.346.663
2016	12.827	1.396.419
2017	11.377	1.441.934
2018	11.596	1.485.650
2019	12.142	1.538.010

Source: Ministry of Culture and Tourism, Tourism Statistics, General Evaluation 2019.

Due to the importance of tourism sector and increased contribution to Turkey's economy, the companies in tourism sector started to grow as financial structures and started to take a serious place in the economy. Due to these reasons, our study consists the companies which operates about coast hotel management in Turkey.

The study consists of three main parts. The first part gives information about tourism sector in the world and Turkey including recent developments in coast hotel management sector, main dynamics of sector and how activities are carried out and periodicity. The second part deals with the meaning of credit rating, also gives answers to questions about why it is used and who uses credit rating and for whom. As details of part, the information is shared about the ratios which are used for credit rating calculations and the methods how credit rating is decided. The third part consists the data of companies operating in coast hotel management, financial ratios of companies, the ratios and Altman Z-Score model which will be used for credit rating analysis for the companies in study. The ratios of companies from Mediterranean Region of Turkey (mainly hotels in Antalya and few hotels in Muğla) are choosed to analysis for this study due to analyze how coast hotel management activities are affected year by year and how credibility of companies and credit rating analysis changes and what kind of comments can be made according to financial ratios in Altman Z-Score model (Gritta, Adrangi, Adams, and Tatyana, 2008, pp. 133-138).

The aim of the study is to show the importance of the tourism sector in the economy and how the companies operating in coast hotel management sector are affected as financially and how we can analyze the companies in sector with their financial ratios and how we can decide the credit ratings of companies over financial ratios. To achieve the aim of study, companies operating in coast hotel managements sector in Antalya and Muğla (popular side of Turkey for coast hotel management and valuable locations for summer summer term vacations). Finally, we will quickly decide about their credibility to make financial evaluations for banks and industry. After obtaining the information about the credibility of companies, approach of sector and banks to companies would be clearer to establish and maintain a commercial relationship, determine working conditions for future periods. Also, the aim of study, instantaneous analysis and visualization of current status risk which should be used anytime for any financial analysis work. In this study, data related to tourism sector, previous studies about credit rating and analysis for tourism sector, documents, articles and books about current changes and developments, interview with experienced managers and directos in banking sector, sectoral reports of tourism

agencies and institutions, and internet resources were utilized (Gritta, Adrangi, Adams, and Tatyana, 2008, pp. 133-138).



2. CHARACTERISTICS OF TOURISM SECTOR AND COMPONENTS THAT DETERMINE THE COMPANY'S VALUE IN THE SECTOR

Tourism or traveling is all the economic, cultural, technical measures and works that are taken for the purposes of resting, having fun, seeing and getting to know, and to attract tourists (tourists) to a country or a region. Touristic trip is not only that people go from one place to another, but also culturally, economically and socially (UNWTO, 2019, pp. 1-24).

Thanks to tourism, people can look at life from different perspectives by realizing the beauty of other countries, the beauties outside the region they live in, and the cultural heritage left by people who lived in the past, believing that it is necessary to leave a more livable world for future generations. Tourists make money for the local people in return for the places they see in the country or region they visit. In other words, tourism makes a great financial contribution to the economy of the country and region visited. In terms of tourism, Antalya earns the most in our country (TUİK, 2020, pp. 1-5).

The word tourism was first used in the 21st century for some British travels to Europe. When this action became widespread around the world after World War II, the word tourism became indelible. These excursions, which were made only by rich and idle people in the past, have increased gradually as a result of the continuous development of transportation facilities (such as speed, comfort and security) and social developments (hotels, motels, campgrounds, resorts etc.) that enable everyone to have a holiday in a short time (UNWTO, 2019, pp. 1-24).

Hotels, motels, hostels, beaches, restaurants and casinos, campgrounds, entertainment areas, sports and hunting facilities, spas are the tourism institutions or establishments. The number of these institutions, their comfort, and the friendliness of their staff and the ease of access to these places increase the flow of tourists. Another factor that increases tourism is the abundance of historical monuments. Ancient city ruins, famous monuments (mosques, churches, outdoor theaters, museums, etc.) have always attracted people's

attention. In addition, natural beauties are an important source of interest (Göktepe, 2011, pp. 1-9).

In this section, we will analyze the characteristics of tourism sector and components that determine the company's value in the sector. In general, information about tourism sector in world and in Turkey will be shared. Recent developments in tourism sector are also mentioned in this section to discuss.

2.1. TOURISM SECTOR IN TURKEY AND RECENT DEVELOPMENTS

i. History of Tourism in The World

Tourism, holiday, entertainment, health, religion, sports (except for commercial reasons) and all the events and relationships related to people who travel while purchasing the services and goods they need during their travel are called tourism.

Tourism is divided into two definitios in terms of the place where the tourist comes from: Foreign tourism, where people living in one country travel to another country for tourism purposes; Tourism activities in which people living in a country participate in their own countries are called internal tourism (Göktepe, 2011, pp. 1-9).

Today, modern tourism is both a branch of science and an industry. It is necessary to study the history of tourism in order to understand its current form.

In the early ages, the Romans were the most traveled people; they made Road maps marking the roads to be followed, their accommodation and distances. For this reason, it is suggested that the Romans were the first tourists to travel for pleasure and that they provided safety on the roads and accommodation places that were traveling. The Romans traveled to see famous temples and artifacts. Among them, the most popular are the Egyptian pyramids and monuments. In the period of Alexander the Great, BC The fact that 700,000 tourists flocked to Ephesus for acrobatics, circus and magician shows in only one season in 334 is an indication of the interest shown in tourism in that period.

Entertainment, pleasure, curiosity and recreational tourism, which were initiated in the early ages, brought religious tourism to the fore and societies were affected (Göktepe, 2011, pp. 1-9).

The most important tourism movements of the Middle Ages; Parallel to the rapid spread of Islam, many people visited Mecca and Medina every year, and the Crusade Wars between Christian and Muslim communities turned into massive movements. Intense travels to Italy due to the Renaissance movements in the New Age created cultural tourism. The industrial revolution led to significant changes in social and economic structures. Passenger transport on the railroad highlights a turn that symbolizes the transition from primitive transport to contemporary transport (Göktepe, 2011, pp. 1-9).

In the last periods of this era, the increase in population, income and urbanization has increased in tourism, and "travel agencies" have been established to plan and organize travels in advance. Thomas COOK, Britain's first travel agent, is actually a preacher who preaches about the evils of the drink. In 1841, COOK started the business of organizing tours for the first time in history by carrying 570 passengers by train between the cities of Leichester-Loughborough in England (Löschburg, 1998, p. 45).

The Near Age is the period when tourism develops fastest. Especially after the 2nd World War, the rapid development in the transportation sector, the cheaper airway transportation, people's starting to see travel and vacation as a necessity have led to the fact that more and more people travel day by day (Göktepe, 2011, pp. 1-9).

Today, the source of life of some countries, cities or regions is based only on tourism. Since it is a service sector, mechanization and automation can only be achieved in very limited areas. This leads to being a labor-intensive sector and the need for a large number of labor force. Since the produced service can only be consumed in the place where it is produced, all the expenses that the tourist will make are the direct income of the country or the city. Tourism sector; It has a direct relationship with sectors such as transportation, accommodation, food and entertainment. On the other hand, it has an indirect relationship with almost all industry and agriculture sector.

ii. History of Tourism in Turkey

As in the world including last 40 years, Turkey has tended to tourism development activities. Tourism is considered among the largest and fastest growing sectors, and all countries strive to get the most out of this development. Therefore, many countries see tourism as an important sector in economic development and develop plans and policies for the development of this sector. Turkey also has been observed developments in the tourism sector, especially in the visible levels depending on the investments made since the 1980s and is nowadays the policy seems to be continuing this development. During this period, not only in the economic, social and cultural fields in Turkey it is opened to the outside, opening-up policy in this period has led to significant improvements in terms of tourism (Zengin, 2010, pp. 102-126).

All these developments bring a clearer explanation of the development of the tourism industry in Turkey, if necessary, pre-planned period (1923-1963) and the planned period (after 1963), including possible to examine the two periods. Tourism in Turkey's economic, social and cultural effects were noticed after the 1940s from 1963 until the 1980s, tended to evolve over time (Çımat and Bahar, 2003, pp. 1-18). Pre-planned period in Turkey's tourism was quite a show slow progress and is unlikely to reach the broadest range of data relating to this period. However, the 1961 Constitution brought with it developments that prepared planned development.

When an analysis is made about the tourism policies before the planned period (1923-1962), it is possible to say that serious steps were not taken in the field of tourism until 1950. However, between the years 1923-1950, while the world's wavy the political conjuncture and often with a period coincided with the continuation of life in war tourism world get dark across the movement, on the other hand the newly founded Republic of Turkey inside and out to solve economic, political and social problems of the present, has led Turkey can not be done the way it should work related to tourism. However, during the period of 1950-1960, some pioneering studies were carried out in this field with the effect of the economic understanding of the power of that period (Kozak, Kozak and

Kozak, 2009, p. 113). Although there were no major developments in tourism before the planned period, this period led to the fact that tourism took its place in the state organization. It can be said that the studies carried out for the development of tourism throughout the period constituted the infrastructure of the planned development period (Sözen, 2007, pp. 63-68).

The state, which did not show the necessary importance to the tourism sector until 1960, included the necessary measures for the development of tourism in its five-year development plans, which were developed and started to be implemented after this year. Turkey, since 1963, has planned to implement the principles of a mixed economy policy. This economic policy is of “Development and Development Policy” and its details are included in “Five Year Development Plans” and “Annual Programs”. Development plans cover the analysis, research, development goals and strategies of the current situation and all the principles and tools necessary to reach these goals (Usta, 2014, pp. 204-205).

The next period from 1960 in Turkey "plan period" is called. This period, “It was developed and implemented as a reaction to the development understanding of the unplanned period of 1950-1960. There are also provisions regarding the plans in the 1961 Constitution (Kozak, Kozak and Kozak, 2009, p. 113). In this regard, in Turkey, the first serious attempt on the tourist industry began in the 1960s.

Plans implemented in Turkey, considered the type of development plans. Accordingly, tourism planning is made taking into account time, place and organizational level, and types of tourism planning can be determined in parallel with these issues. Tourism planning can be organized in 3 stages as long-term tourism planning, medium term tourism planning and short-term tourism planning according to the time or period covered (İçöz, Var, and İlhan, 2009, p. 104).

The Planned Period started with a temporary plan put into effect in 1962 and is still coming. Planned period in Turkey were generally being implemented with the Five-Year Development Plan, adopted in the mid-term planning. When this planning was not implemented, short-term planning transition programs were implemented. 1978, 1984,

1995 and 2006 were the years when these transition programs were implemented. Five-Year Development Plans represent the goals, principles and methods of economic policy. Development plans are laws adopted in parliaments, and annual programs are governmental decrees (Bükey, 2012, pp. 3-67).

The five-year development plans include mandatory targets for public investments and guiding targets for private sector investments. The private sector is encouraged by various incentives to achieve the goals shown. “State Planning Organization”, which became a constitutional institution with the 1961 Constitution, has become the institution that decides which private investments will receive incentives (Coşkun, 2010, pp. 3-78). In the Five-Year Development Plans, the principle of mixed economy and freedom of enterprise, which is accepted as the main principle for economic policy, is also envisaged for the tourism sector (Bükey, 2012, pp. 3-67).

As a result, it had been beginning to discuss a broad perspective of economic policies in Turkey in 1960, also refers to the year in which tourism began to understand the importance. The most important development for the tourism sector after 1960 is that the sector is accepted as a service sector and included in the First Five Year Development Plan (1963-1967) (Çımat and Bahar, 2003, pp. 1-18).

iii. Recent Developments and Crises in Tourism Sector in Turkey

The tourism sector in Turkey is periodically affected by the events experienced at national and international level. Economic crises that occurred in 1994, 2000, 2001, 2008 (Ayaz, 2016, pp. 1360-1371). Izmit earthquake in which 17 thousand people died in 1999, the Kuwait War between 2003 and 2011, bird flu that also affected the world and our country in 2006. Civil war in Syria since 2011, terrorist activities that took place at certain intervals are some of them (COMCEC, 2017, pp. 1-7). The decrease in oil prices in 2014 has shaken the economy of Russia, which provides 50,2% of tax revenues from oil and natural gas revenues. The economic problems experienced with the constant decline of world oil prices caused the Russian Ruble to rapidly depreciate against foreign currencies and deteriorate financial stability (Aydın and Gencür, 2015, pp. 43-64). Due to the fall in

global oil prices, Russian purchasing power parity has weakened. In this case, they prefer mostly Russian tourists as a destination in Finland, Lithuania, Switzerland and the Czech Republic as well as countries such as Turkey was also negatively affected. Compared to other countries, Turkey was among the countries least affected by it (Tekin, 2015, pp. 265-272). However, Turkey's border breach between Russian on November 24, 2015 on the grounds of the country after dropping the war aircraft belonging to the Russian Federation has experienced political tension. The Turkish tourism sector has been in a difficult situation with Russia's prohibition of tour sales and charter flights. Russia, the second largest market for Turkey with 4.5 million tourists (BMI, 2015, pp. 2-26) is a market which accounts for 12% of tourism demand in other words, the orientation of Turkey. Relations between the two countries deeply affected the Russian market, and in 2016, the number of Russian tourists decreased by 76%. In addition, the coup attempt on July 15, 2016 has deeply affected the political, economic and social structure of the country. Tourism sector is one of the leading sectors that feel the deepest impact (Aydın and Gencür, 2015, pp. 43-64).

Moreover, in 2016, 7 terrorist attacks in İstanbul, 5 in Diyarbakır, 3 in Mardin, 2 in Ankara, 2 in Gaziantep, 1 in Bursa, 1 in Elazığ, 1 in Bingöl, 1 in Van, 1 in Şırnak, 1 in Hakkari, 1 in Adana and 1 in Kayseri had been seen and spread over a wide geography in Turkey (Öksüz and Batu, 2017, pp. 85-108). Especially, İstanbul which is one of the tourism centers of Turkey is directly affected with terrorist attacks and lost tourism revenues related to negative developments.

Syria and geopolitical risks caused by civil war in the region, the negative effect of terrorist attacks, realized in Turkey, the coup attempt and politic issues between Turkey and Russia on number of tourists visiting Turkey in 2016 year-end if comparing with 2015 year-end is seen in the table given below which is prepared by TURSAB (Association of Turkish Travel Agencies).

Table 2.1: The number of foreign guests between 2014-2016 by month

Months	Years		
	2014	2015	2016
January	1.146.815	1.250.941	1.170.333
February	1.352.184	1.383.343	1.240.633
March	1.851.980	1.895.940	1.652.511
April	2.652.071	2.437.263	1.753.045
May	3.900.096	3.804.158	2.485.411
June	4.335.075	4.123.109	2.438.293
July	5.214.519	5.480.502	3.468.202
August	5.283.333	5.130.967	3.183.003
September	4.352.429	4.251.870	2.855.397
October	3.439.554	3.301.194	2.449.948
November	1.729.803	1.720.554	1.353.280
December	1.580.041	1.464.791	1.302.157
TOTAL	36.837.900	36.244.632	25.352.213

Source: Association of Turkish Travel Agencies, Turist Sayısı ve Turizm Geliri, pp. 1-3, <https://www.tursab.org.tr/istatistikler/turist-sayisi-ve-turizm-geliri/> Aylık turist sayıları 1990 – 2019. [Accessed date: 01.04.2020].

As seen in the Table 2, the number of tourists in Turkey in 2014-2015 years was close to each other, but in 2016 it is seen that a clearly reduced. Hence, the conclusion that the crisis can be reached directly affected by terrorism originating from the tourism destinations in Turkey. It is clear that the tourists have already researched the country they will visit and will give up visiting the country in case of any security concerns. At this point, the fear created by terrorist attacks affects tourists' visits to destinations and the number of tourists decreases in countries where terrorist attacks occur and 9 billion USD revenue loss has been also realized according to previous terms (Öksüz and Batu, 2017, pp. 85-108).

iv. After 2016 Crisis In Tourism Sector In Turkey

As a result of economic crisis in tourism sector due to the reasons mentioned above, the companies in tourism sector (especially in coast hotel management sector) learned that turning towards alternative tourist markets, waiting for more balanced and controlled periods for investment processes, the companies operating in hotel management should check their borrowings and acquire the skills to manage their structuring processes, exploring the dynamics of the sector's commitment to political events how acts of terrorism, Turkey-Russia, Turkey-Germany relations directly affect the sector.

After enlarging the tourist portfolio and finding out new tourist markets as alternatives of Russian and European tourists and obtaining more tourists from Arab culture countries, more Turkish visitors after lower price proposals, crisis survived by companies. Then a new term started after 2016 crisis and the rapid rise of the sector continued in 2017 where it left out in 2015. In Table 3 below, it is shown that how the number of guests are increased according to the year of 2016, especially increase in number of Russian guests 444% increases where it was -76% decrease in 2016 is seen in Table 3. The tables in the below show how the revenues and number of guests has changed between the years of 2015 and 2019. In Table 4, increase trend of number of guests from Germany, Russia, Bulgaria and other European countries is seen again if the numbers are compared the years of 2016 and 2017.

Table 2.2: Changes of number of tourists between 2015-2017 in country-based

Country	2015	2016	2017	Change (2015-2016)	Change (2016-2017)
Russia	3 649 003	866 256	4 715 438	-76%	444%
Germany	5 580 792	3 890 074	3 584 653	-30%	-8%
Iranian	1 700 385	1 665 160	2 501 948	-2%	50%
Georgia	1 911 832	2 206 266	2 438 730	15%	11%
Bulgaria	1 821 480	1 690 766	1 852 867	-7%	10%
England	2 512 139	1 711 481	1 658 715	-32%	-3%
Ukraine	706 551	1 045 043	1 284 735	48%	23%
iraq	1 094 144	420 831	896 876	-62%	113%
Holland	1 232 487	906 336	799 006	-26%	-12%
Azerbaijan	602 488	606 223	765 514	1%	26%
Saudi Arabia	450 674	530 410	651 170	18%	23%
Greece	755 414	593 150	623 705	-21%	5%
France	847 259	555 151	578 524	-34%	4%
Romania	441 097	357 473	423 868	-19%	19%
Belgium	617 406	413 614	419 998	-33%	2%
Syria	847 275	291 754	404 203	-66%	39%

Source: Republic of Turkey Ministry of Culture and Tourism, Border Statistics.

Table 2.3: Changes of number of tourists between 2016-2018 in country-based

2016	%	2017	%	2018	%	Countries
866,256	3.42	4,715,438	14.55	5 964 613	15.10	<i>Russian Federation</i>
3,890,074	15.34	3,584,653	11.06	4,512,360	11.43	<i>Germany</i>
1,690,766	6.67	1,852,867	5.72	2 386 885	6.04	<i>Bulgaria</i>
1,711,481	6.75	1,658,715	5.12	2 254 871	5.71	<i>United Kingdom</i>
2,206,266	8.70	2,438,730	7.52	2 069 392	5.24	<i>Georgia</i>
1,665,160	6.57	2,501,948	7.72	2 001 744	5.07	<i>Iran</i>
1,045,043	4.12	1,284,735	3.96	1 386 934	3.51	<i>Ukraine</i>
420,831	1.66	896,876	2.77	1 172 896	2.97	<i>Iraq</i>
906,336	3.57	799,006	2.47	1 013 642	2.57	<i>Netherlands</i>
606,223	2.39	765,514	2.36	858 506	2.17	<i>Azerbaijan</i>
555,151	2.19	578,524	1.79	731 379	1.85	<i>France</i>
593,150	2.34	623,705	1.92	686 891	1.74	<i>Greece</i>

Source: Republic of Turkey Ministry of Culture and Tourism, Border Statistics.

In Table 5, it is seen that the tourism income and number of visitors are increased despite the decrease in average expenses per capita in USD-basis, and total number of visitors is 45,6 million and tourism income is USD 29,5 billion.

Table 2.4: Tourism Statistics, Quarter IV: October-December and Annual, 2018

Year	Quarter	Departing visitors			Arriving citizens (Resident in Turkey)		
		Tourism income (Thousand \$)	Number of visitors	Average expenses per capita (\$)	Tourism expenditure (Thousand \$)	Number of citizens	Average expenses per capita (\$)
2017	Annual	26 283 656	38 620 346	681	5 137 244	8 886 916	578
	I	3 369 753	4 844 761	696	855 786	1 897 554	451
	II	5 413 048	8 863 391	611	1 386 362	2 294 588	604
	III	11 391 668	16 663 265	684	1 560 756	2 514 317	621
	IV	6 109 187	8 248 929	741	1 334 340	2 180 457	612
2018	Annual	29 512 926	45 628 673	647	4 896 310	8 383 432	584
	I	4 425 237	6 122 182	723	1 079 008	2 070 534	521
	II	7 044 591	11 067 987	636	1 650 276	2 194 058	752
	III	11 502 665	18 786 765	612	1 209 379	2 265 796	534
	IV	6 540 434	9 651 740	678	957 647	1 853 045	517
	October	3 318 226	4 791 439	693	328 383	634 078	518
	November	1 794 595	2 679 420	670	302 119	592 426	510
	December	1 427 614	2 180 881	655	327 145	626 541	522

Source: Turkish Statistical Institute, Tourism Statistics, Quarter IV: October-December and Annual, 2018.

New Five-Year Development Plan had been explained between the years 2019-2023 by Government and the expectations until 2023 is shown in Table 6 below in terms of revenues, number of guests, spending, etc.

Table 2.5: Tourism Targets between the years of 2019-2023

Targets	Years	
	2018	2023
Tourism Revenues (Billion USD)	30	65
Number of guests (Million)	46	75
Number of foreign guests (Million)	40	68
Average spending per guest (USD)	647	867
Average accommodation (night)	10	10
Revenue per night for each guest (USD)	66	87

Source: Strategy and Budget Department of Republic of Turkey Presidency, Eleventh Development Plan (2019-2023), July 2019.

Table 2.6: Tourism Statistics, Quarter IV: October-December and Annual, 2019

Year	Quarter	Departing visitors					
		Tourism income (Thousand \$)	Rate of change* (%)	Number of visitors	Rate of change* (%)	Average expenditure per capita (\$)	Average expenditure per night (\$)
2018	Annual	29 512 926	12.3	45 628 673	18.1	647	65
	I	4 425 237	31.3	6 122 182	26.4	723	65
	II	7 044 591	30.1	11 067 987	24.9	636	74
	III	11 502 665	1.0	18 786 765	12.7	612	65
	IV	6 540 434	7.1	9 651 740	17.0	678	57
2019	Annual	34 520 332	17.0	51 860 042	13.7	666	68
	I	4 629 679	4.6	6 644 391	8.5	697	67
	II	7 973 963	13.2	12 762 346	15.3	625	68
	III	14 031 122	22.0	21 611 964	15.0	649	73
	IV	7 885 568	20.6	10 841 340	12.3	727	62

Figures in table may not add up to totals due to rounding.
(*) Rate of change: Calculated according to the same period of the previous year.

Source: Turkish Statistical Institute, Tourism Statistics, Quarter IV: October-December and Annual, 2019.

After the positive changes in tourism sector, the increase trend of sector had been continued in 2019. In Table 7, it is seen that the tourism income, average expenditure per capita, and number of visitors had been increased. Total number of visitors is 51,9 million and tourism income is USD 34,5 billion in 2019.

iv. Current Development in Tourism Sector

- ***Covid-19 effect***

Coronaviruses (CoV) are a large family of viruses that cause a variety of diseases, from the common cold to more serious diseases such as the Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV) (Turkish Ministry of Health, 2020, p. 1).

New Coronary Virus Disease (COVID-19) is a virus identified on January 13, 2020, after research in a group of patients who first developed respiratory symptoms (fever, cough, shortness of breath) in Wuhan Province in late December (Turkish Ministry of Health, 2020, p. 1).

The outbreak was initially detected in those in the seafood and animal market in this region. Then it spread from person to person and spread to other cities in the province of Hubei, mainly Wuhan, and other provinces of the People's Republic of China and other countries of the world.

On 11th March, 2020, covid-19 was announced as a pandemic by the World Health Organization. Currently, 217 destinations worldwide, currently 45% have totally or partially closed their borders for tourists, 30% have suspended totally or partially international flights, 18% are banning the entry for passengers from specific countries of origin or passengers who have transited through specific destinations, 7% are applying different measures, such as quarantine or self-isolation for 14 days and visa measures. In other words, 209 countries (96% of total destinations) apply restrictions for travelling and there are no flights between the countries (UNWTO, 2020, pp. 1-6).

In Turkey, the first case had been confirmed in March, 2020 and the regulations and restrictions had been applied all over the country after March, 2020. Tourism sector had been affected from restrictions for travelling and cancellations of flights. After

cancellations of flights by government and hotel reservations by guests or agencies, the sector had been affected in a negative way (Deloitte, 2020, pp. 1-2).

Table 2.7: Tourism Statistics, Quarter I: January-March, 2020

Year	Quarter	Departing visitors					
		Tourism income (Thousand \$)	Rate of change* (%)	Number of visitors	Rate of change* (%)	Average expenditure per capita (\$)	Average expenditure per night (\$)
2019	Annual	34 520 332	17.0	51 860 042	13.7	666	68
	I	4 629 679	4.6	6 644 391	8.5	697	67
	II	7 973 963	13.2	12 762 346	15.3	625	68
	III	14 031 122	22.0	21 611 964	15.0	649	73
	IV	7 885 568	20.6	10 841 340	12.3	727	62
2020	I	4 101 206	-11.4	5 639 413	-15.1	727	70

Figures in table may not add up to totals due to rounding.
 (*) Rate of change: Calculated according to the same period of the previous year.

Source: Turkish Statistical Institute, Tourism Statistics, Quarter I: January-March, 2020.

Tourism is the one of the largest and most important sectors of Turkey today. In 2019; 51,9 million tourists were hosted including all foreign guests and Turkish citizens abroad and approximately 34,5 billion dollars of revenue was obtained (TUIK, 2020, pp. 1-5). As of 31.03.2020 in Table 8 above, number of departing visitors decreased by 15.1% compared to same quarter of previous year and declined to 5.639.413 guests. While 82.2% of visitors was foreign with 4.635.845 guests, 17.8% of them was Turkish citizens resident abroad with 1.003.568 guest (TUIK, 2020, pp. 1-5). (In 2019; 51,9 million tourists were hosted including all foreign guests and Turkish citizens abroad and approximately 34,5 billion dollars of revenue was obtained (TUIK, 2020, pp. 1-5)).

Moreover, for France: -%40 decrease (38 million tourists), for Spain: -%42 decrease (34 million tourists), for Italia -%49 decrease (31 million tourists), for Turkey: -%34 decrease (18 million tourists), for Germany: -%39 decrease (15 million tourist), for Greece: -%36 decrease (11 million tourist) on number of tourists according to the previous year is expected (Deloitte, 2020, pp. 1-2).

2.2. GENERAL CHARACTERISTIC OF COAST HOTEL MANAGEMENT SECTOR IN TURKEY

In this section, interviews, conversations with experienced people about tourism sector, analyzing the tourism sector, coast hotel management companies are realized and all conversations and interviews are given by explaining under subjects below.

The interviews and conversations were realized with people from different financial institutions and hotel owners in different locations of Turkey. Due to the privacy, no name is explained.

2.2.1. Factors That Determine Company Value In Tourism Sector

In this part, the factors which determines company value in tourism sector and which criterias are important for coast hotel managements and how the factors affect the value of hotels. The main factors are listed below and then explanations about factors will be shared;

- Location
- Tourist Portfolio
- Capacity
- Star
- Social Facilities and Areas
- Travel Agencies (The bankruptcy of Thomas Cook will be mentioned in this section)

2.2.1.1. Location

The basic and the most important factor which directly affects the value of the hotels or the companies operating in tourism sector is the location. The general idea is that the city hotel which is operated by companies must be close to the city center. If a company operates in coast hotel management sector, the distance to the beach, the maintenance and

cleaning of the beach, the city where the hotel is located, and the province or district of hotel, many issues such as transportation, proximity to the airport are important to determine the value of hotel. The majority of hotel owners in Antalya, with sector experience, the value of hotels with same capacities in Lara (a province of Antalya which is a popular tourism center) and Alanya (another province of Antalya, the popularity row is around 3rd or 4th between tourism centers (TUIK, 2020, pp. 1-5)) are totally different. At least three or four times is larger value is calculated in Lara according to the Alanya.

In general, the coast hotel management companies take place in coastal areas, provinces of Turkey, which is popular for summer tourism such as Antalya, Muğla and Aydın take place in cities such as directly affect the company valuation. The main tourism center for coast hotel management is Antalya. In Antalya, over 15 million guests visited the city and stayed in hotels during the year (TUIK, 2020, pp. 1-5).

In Antalya and other provinces, the coastal area and the distance to the beach directly affect the hotel's customer portfolio, and the proximity to the beach in general attracts attention as a more attractive element for tourists. In this context, hotel occupancy, which is one of the most important factors affecting the income and profitability of the hotel, is a ratio that moves in parallel with the location, and location preferences are generally made by the hotel visitors or tourists from the beach side to the inner parts.

Transportation, proximity to the airport and ease of transportation to the city centers attract tourists' attention, and ease of transportation is one of the reasons of preference especially for the visitors who will receive service from the mentioned hotels for the first time.

2.2.1.2. Tourist portfolio

The tourist portfolio can be examined in two parts, in general,

i. Country-based distribution of tourists:

In terms of country and nationality, the tourist portfolio is an element affecting income, especially the economic situation of the countries concerned can affect the amount of expenditure of tourists visiting the hotels and the entrance prices to the hotel. In 2015, ruble devaluation in Russia directly affected to Russian guests and they were redirected to cheaper hotels or they did not travel outside of Russia (Öksüz and Batu, 2017, pp. 85-108).

ii. Economic class of tourists:

Economic class of tourists are important for spending amount per person in tourism. The tourism portfolio of Turkey is generally the people whose level are low and moderate in the European and Russian markets. Economic classes of tourists directly affect income per room / person, and prices are at lower levels compared to hotels that appeal to the rich. In 2019, average spending per person during all vacation in Turkey was 456 USD (TUIK, 2020, pp. 1-5).

2.2.1.3. Capacity

It is a situation related to the room and bed capacity of the hotel, it directly affects the turnover and profitability and directly affects the value of the hotel (the company that operates the hotel).

2.2.1.4. Star

The tourism business certificate of the hotel and the star rating it owns depend on the service and quality standards of the hotel and is a factor that directly affects the hotel's valuation.

2.2.1.5. Social facilities and areas

The fact that the hotels have the facilities for all the needs of the tourists is an essential element in meeting the demands of the tourists or visitors. In particular, the provision of shopping, entertainment services, activities and social facilities appealing to all age groups are the main reasons why the hotel is preferred by more people. In this context, the hotel must have sufficient facilities and social facilities to ensure occupancy and address a wide customer portfolio. The relevant point affects especially the turnover and profitability directly and indirectly affects the value of the hotel (the company that operates the hotel) (Nadiri and Hussain, 2005, pp. 469-480).

2.2.1.6. Travel agents

Travel agents are agencies that work depending on the tourist portfolio, and the agency connections of the hotel are important in terms of activities. Especially for the European and Russian tourist markets, the hotels' working with agencies such as Tui, Pegas, Odeon and the customer portfolio of the agencies in the country and around the world directly affect the turnover and profitability and indirectly affect the value of the hotel (the company that operates the hotel).

As of September, 2019, the oldest travel agency of world “Thomas Cook” announced the its’ bankruptcy. The bankruptcy of Thomas Cook directly affect all tourism activities in the world and in Turkey. The effect of bankruptcy of Thomas Cook in Turkey’s tourism sector was seen in 2019. ~1-1,5 million tourists from United Kingdom had worked with Thomas Cook to travel to Turkey (TUIK, 2020, pp. 1-5). Currently, TUI (which is one of the largest agencies in world (Laws, 1991, pp. 2-18)) and other agencies replace for this issue and agreements are done instead of Thomas Cook (Özkan, 2019, pp. 1-3).

2.2.2. Financial Structure Characteristics And Periodicity Of Tourism Companies

The coast hotel management business companies in Turkey, other sectors (excluding companies using special accounting period) the period between companies operating in

by January-December accepts exactly one year. On the other hand, mainly the activities of the coast hotel management companies in Turkey are monitored mainly during the summer term turnover and profitability also varies depending on the performance of the summer term.

When coast hotel management activities in Turkey is called, comes to mind first cities in Antalya, Izmir, Mugla, Aydin. Especially, the hotel in the coast of Antalya are the main players in the sector.

The companies operating in coastal hotel management generally operate between April and November every year, and there are hotels operating year-round, according to hotel capacities and facilities. In particular, it is an important factor for the tourists to be able to perform all social activities and activities in accordance with the holiday concept within the hotel area, so that the facility used will be active all year. Also, the table below shows the distributions of guest arrivals quarterly and explains why most hotels operate between the months April and November.

Table 2.8: Tourism Statistics, Quarter I: January-March, 2020

Year	Quarter	Tourism income (Thousand \$)	Rate of change* (%)	Departing visitors			
				Number of visitors	Rate of change* (%)	Average expenditure per capita (\$)	Average expenditure per night (\$)
2019	Annual	34 520 332	17.0	51 860 042	13.7	666	68
	I	4 629 679	4.6	6 644 391	8.5	697	67
	II	7 973 963	13.2	12 762 346	15.3	625	68
	III	14 031 122	22.0	21 611 964	15.0	649	73
	IV	7 885 568	20.6	10 841 340	12.3	727	62
2020	I	4 101 206	-11.4	5 639 413	-15.1	727	70

Figures in table may not add up to totals due to rounding.
(*) Rate of change: Calculated according to the same period of the previous year.

Source: Turkish Statistical Institute, Tourism Statistics, Quarter I: January-March, 2020.

In Table 9, it is shown that the revenues of number of visitors are change in quarterly terms. The best and popular term is 3rd term which is summer term in Turkey according to revenues and number of visitors.

In the tourism sector, it would be more appropriate to evaluate the financial structures of companies in three sections.

- i. Characteristic of the balance sheet and actively used accounts
- ii. Characteristic of the income statement and the periods in which it actively works
- iii. The effect of seasonality

2.2.2.1. Characteristic of the balance sheet and actively used accounts

One of the most striking factors in the assets of companies operating in the tourism sector are fixed assets. Among the fixed assets, the accounts that draw attention in general are: Buildings (including Facilities, Machinery and Devices), Rights and Special Costs.

Accounting is recorded in terms of the ownership of the hotel used in the activities, the rental facility or the facility with the allocation time established on the forest land.

Among the Current Assets, the most noticeable accounts are the Transferrable VAT (accounts expected to be offset depending on the investment process of the hotels), Trade Receivables (these accounts are mainly composed of the receivables from the hotels where the hotels operate, partly the shops / stores rented within the hotels. The subject consists of receivables from tenants), checks / promissory notes (balances received in general for the next period) as advances from agencies (Demirkol, 2004, pp. 6-43).

In particular, the maturity of the checks / notes received from the advance and the quality of the receivables from the agencies are the factors that affect the liquidity of the hotels. In the case of the profitability, liquidity of the hotels and the advances received in cash, reasonable amounts can be seen in the bank account.

2.2.2.2. Characteristic of the income statement and the periods in which it actively works

While the seasonality is partially effective in the turnover and EBITDA of the companies operating in the city sector in the tourism sector, this situation is more evident in the companies operating in the field of hotel management. It is observed that companies operating in coast hotel management generally do not generate profits in the first 4 months of the year and achieve low turnovers. In these periods when the hotel occupancy rate is low, hotels usually prepare for the summer period with reservations and prepare the hotel for the season. After April, although there is a partial increase in profitability and turnover in general, the real increase is between June and September. Especially at the end of the 9th month, the season performance of the hotels can be seen and it can be estimated how the related year will be completed and how much revenue and profit will be obtained. The summary of one year in all companies operating in coastal hotel management is as follows:

January-April:

- In general, hotels are closed,
- Occupancy rate in open hotels is very low,
- During this period, there is only preparation for the season and there is no profitability, The aim is to be ready for the season and have a good summer period, to keep all employees for activities,
- Profitability and turnover do not occur this period,
- In this period, reservations are expected to be completed, the forecast comes, the number of visits is determined,

April-June:

- Hotels start to be opened and operate,
- With the hosting of the visitors in the hotels, the increase starts in the turnover,
- Usually there are low price rooms and low profitability,

June-September:

- It is the period that determines the dynamics of the sector,
- Generally, it is the period with the highest prices and the most visitors.
- Profitability and turnover are completely clear in this period,
- The performance of this period is considered as the performance of the year,
- The efficiency of this period is the efficiency of hotels financially,

October-December:

- Some hotels continue their activities,
- Generally, no reservation is made, hotels that remain open due to excess demand operate,
- Prices are lower than the summer season,
- According to the cost calculation, the hotel is left open or closed,
- This period is usually the debt payment period of the hotels, together with the funds that the hotels earn in the season, they close their debts in this period,
- At the same time, this period means the preparatory period of the next year, usually early reservation agreements for the next period will be made as of November,
- The purpose in this period is rather than activity, it is in the form of evaluation of the period and preparation for the new period,

2.2.2.3. The effect of seasonality

Companies operating in coastal hotel management take action on their activities as of the periods mentioned above and make all payments and collections according to this program.

Loans with short term payments are generally used in the first months of the year and are used for financing season preparations. Apart from that, it is not seen that hotels generally use loan during the season. Loans can be used up to the maturity of agency receivables.

Long-term loans are generally due to financing hotel investments or hotel renovations. Although every hotel needs periodic restoration, renovation works can be done every year depending on the capacity and age of the hotel.

Loan repayment terms of companies operating in coastal hotel management are generally the last quarter of the year, and the main reason for this is that the performance of summer season determines the sources amount from the activities and the companies are able to pay after the season ends (Köroğlu and Aktaş, 2014, pp. 273-290).

2.2.3. Financial Needs and Credit Demand Cycles Of Tourism Companies

Tourism sector is a sector that needs financing periodically due to its activities. It is a sector looking for different sources of financing in many different periods such as needs that emerge periodically throughout the year, investment period needs, and crisis period needs.

2.2.3.1. Periodically emerging needs

Since the periods in which the companies operating in the tourism sector generate fund are summer months, there may be financing requests before summer (this is usually the first months of the year). These demands, which usually appear during the preparation phase of the season, are the demands that the hotels make to meet all their needs so that they can enter the season ready for the season. Since, in the preparation period, some of the cash advances received from the agencies are generally used, and taking into account the fact that the agencies will make the remaining payments on season term, they are the needs for the purpose of eliminating the cash deficits arising within the scope of the short-term cash needs. Loans originating from working capital needs, which are generally used in the first months of the year, have a maximum one-year term, and generally consist of funds obtained at the end of the year or loans that are closed before maturity with cash surplus generated during the season. At the same time, it is seen that there are also

business card or metro account usage for financing the food and beverage stock needs of the hotels (Gönen and Ergun, 2008, pp. 183-204).

2.2.3.2. Investment period needs

We can evaluate the investment period needs of companies operating in coastal hotel management in 3 ways:

i. Renovation spending for existing hotels:

This situation is generally valid for all hotels. At the end of each season, after the end of the summer season, renewal and renovation works are carried out in the hotels before the new period, and a certain budget is generally reserved for renovation investments. Also, for summer term, the construction is not allowed. The construction works are only realized between November-April for winter term.

ii. Purchase and operation of an operating hotel:

It is a project-based consideration, and is one of the investments to be financed in line with the cash flow study to be prepared for the hotel, taking into account criteria such as past performance of the hotel in operation, tourist portfolio, profitability and turnover development. The most important issue here is whether the amount to be determined for purchase financing can be paid by the hotel's own activities.

iii. New hotel investment:

It is a subject to be evaluated on a project basis, such as the location to be invested, the capacities of the hotel, the past period performances of the hotels in the same province or area, the tourist portfolio coming to the relevant region, the experience of the people who will make the investment in the sector, the agencies to work with, whether the people who will make the investment currently have hotels in the relevant sector. It is one of the investments to be financed in line with the cash flow study to be prepared for the hotel.

The most important issue here is how much equity-loan ratio will be for the investment and how the cash deficit will be financed if it is realized in the projected cash flow.

2.2.3.3. Crisis period needs

As experienced in many sectors in Turkey and the world crisis, the tourism industry is a sector affected by the crisis. In particular, political and economic crises with countries where tourist portfolios are predominant are the main causes of crises. At the same time, fluctuations in the exchange rates can be said as one of the factors affecting the tourism sector (Although the increase in the exchange rates is a negative issue for the country's economy, it can have a positive effect for the tourism sector in general (due to the exchange rate of revenues, the foreign exchange + TL rate of expenses). Terrorist attacks seen across our recently in the country, the Syrian crisis and has been negatively affect the voltage of tourism between Russia and Turkey, has been a downturn in 2016 and the industry. in particular, following the 2014 and 2015 with a record of serious decline in 2016 due to unexpected events, many tourism firm negatively affected and even many hotels and companies closed in these periods (Öksüz and Batu, 2017, pp. 85-108).

In crisis periods, hotels are generally watched as being unable to generate fund, keeping their hotels closed, and especially in the investment process hotels or companies with debt repayments in times when they cannot generate fund, have more financial difficulties than other companies. During these periods, the payments in the crisis periods are generally refinanced/restuctured with new long-term loans, and it is aimed to solve the financial liquidity problem of the companies without paying the debt during the crisis. In particular, the loans of hotels with credit repayments in 2016 were structured by banks, and many hotels did not pay in 2016 and 2017. During this period, the sector recovered, and with 2018, the payment processes were renewed. The tourism sector, which has recovered in the short term, is returning to its former performances, and can predict what kind of needs may be during crisis periods. In this context, crisis periods can be considered as a period when some sort of structuring loans are brought to the agenda for the tourism sector. Currently, due to the covid-19 virus crisis in tourism, many regulations and help are realized for tourism sector including restructuring current payments,

postponing the maturity of existing bank loan repayments, cash support for existing payments, not collecting rental fees for rental hotel buildings or rental lands (TOBB, 2020, pp. 1-3).

2.2.4. Banks' Approach To Tourism Companies In Coast Hotel Management Sector

The tourism sector in Turkey is generally divided into the coast and city hotel. In this section, banks that provided the financing terms for hotel investments are considered in this context. As a general perspective, it is known that banks are not willing to finance city hotel management due to the capacity surplus of Turkey for city hotels. On the other hand, it is known that they are more willing to finance coastal hotel investments. Although we face the capacity problem as the most common problem in the financing of city hotel management, satisfactory results can not be obtained in terms of financing cost and return on investment. The fact that the city hotels planned to be built in big cities such as Istanbul, Ankara and Izmir face the excess capacity in the mentioned cities and the high costs in the real estate values increase the return time for the companies.

In coastal hotel management, issues such as the location of the hotel to be built, the distance to the sea, the tourist portfolio to be hosted and the past sector experience of the companies or partners directly affect the financial return periods of the investments.

In this context, tourism sector investments which are analyzed and analyzed by banks as closed circuits, are analyzed differently from other production facilities investments. Especially, the income is based on USD or EUR which reduces FX position deficit risk with nature hedging, which attracts banks for financing companies' investments. The fact that the technically created profit can meet the direct financing costs is one of the issues taken into consideration at the financing point. In particular, EBITDA's direct impact on the debt payment period in the tourism sector determines the term of the investment to be financed.

While city hotel management is carried out all season, beach hotel management is a seasonally active area in average 7-8 months periods. In particular, it obtained the highest

income of the coast hotels in Turkey is equivalent to the months of the summer period, in the summer in order to see the performance of banks in terms of loan repayment of resources to show the coastal hotel industry is important. While the repayments of the loans used in the financing of city hotel management can be made in any month, loan payments of the companies operating in the field of hotel management are made in the last quarter of the year after September. In the last quarter, coast hotels in general completed the season, earned their income and were able to pay.

When the collaterals received for the financing of investments in the tourism sector are analyzed, mortgages taken on hotels whose investment is financed or any active hotels of companies constitute the guarantees unless there are exceptional cases in general. Especially the use of the loans used in hotel construction financing makes the net collateral value reasonable for the loan (Juen and Mustapha, 2015, pp. 39-82). This is one of the main reasons why tourism sector financing, in which a secured structure is established, is attractive for banks. On the other hand, the fact that borrowing in general is based on EUR and USD, determining the real estate value on TL, poses a risk for banks in possible devaluation and foreign exchange increases. Understanding the dynamics of the industry and evaluating the profitability of the hotels during these periods of LTV (Loan to Value for collateral coverage ratio) problem is a more accurate analysis.

In the collateral structures where the appraisal value is important, the legal and market values of the hotels are considered as the collateral condition for the banks. Although mortgages are said to be the indispensable guarantee of the tourism sector, it is important to get surety of the partners and other companies operating. In cases where the investment (revenues of the hotel) are not sufficient for loan repayments, the financial support of the partners and other group companies is important and encourages the banks to provide financing (Juen and Mustapha, 2015, pp. 39-82).

To conclude, city hotels are not attractive in terms of bank financing has been a coastal hotel business of tourism sector in Turkey who always demand due to the dynamics. The seasonal performances of the beach hotel establishments, where banks provide financing in a generally secured structure, draw attention as a closely monitored issue. Despite the

possibility of high concentration risk due to investment financing, the fact that banks have secured loans is also a risk reducing factor for banks despite the possible asset value decrease in crisis terms.



3. CREDIT RATING

After introducing and analyzing the tourism sector, we will combine credit rating methods and tourism sector. In this section, mainly information about credit rating methods will be given which will be used in our analysis.

3.1 WHAT IS CREDIT RATING?

Credit rating as its simplest definition, is the opinion created by credit rating agencies about the credit risk of the borrower (Standard and Poors' Financial Services, 2014, pp. 319-2017).

The "Standard & Poor's" ratings are defined as "the organization's view of the borrower's financial obligation and timely repayment of the borrower's financial obligation. The party subject to the rating may be a government, financial institution, company or an issued financial asset. From the perspective of the borrower, credit ratings are generally a must for the borrower who wants to issue bonds. In many countries, it is very difficult to put an unrated debt instrument on the market. Many investment funds or pension funds apply rules on credit ratings in their investments on debt instruments (such as not investing below a certain grade). Borrowing institutions can have a broader creditor base and access to more diverse debt products if they rate the debt assets they issue (Standard and Poors' Financial Services, 2014, pp. 319-2017).

3.1.1 Necessity

According to "Guide to Credit Rating Essentials" reports of Standard and Poor's Financial Services which is published in 2014, the credit rating's necessities are listed below (Standard and Poors' Financial Services, 2014, pp. 319-2017);

- Credit ratings play an important role in helping companies and governments find funds from capital markets.

- States and companies that want to borrow directly from investors by issuing bonds rather than using loans from the bank provide information about their credit worthiness to investors who demand their issuance thanks to their credit ratings.
- Credit ratings thus facilitate the processes of issuing and buying bonds by providing an effective, wide-ranging long-term relative credit risk measure.

3.1.2 Who Uses Credit Ratings And Why?

In this section, we will give information about users of credit ratings and why they choose credit rating and how they use credit ratings. In general, 5 main groups should be classified as users of credit ratings which are listed below (Bolgün and Akçay, 2005, pp. 134-174);

3.1.2.1. Investors

Investors mostly use credit ratings when evaluating credit risk and comparing different issuers and different debt instruments when making investment decisions and managing their portfolios.

Institutional investors and brokerage firms, such as mutual funds, pension funds, banks and insurance companies, can also use their credit ratings to create a threshold for credit risk, while supporting their own credit analysis.

Most importantly, credit ratings provide an important source of information about the risk they take to investors. This reduces agency costs resulting from not having equal information between parties and contributes to more effective operation of the markets

3.1.2.2. Brokerage institutions

Investment bankers mediate the flows of capital from investors to issuers. These institutions can use their credit ratings to "benchmark " the relative risk of different debt

instruments, or as a helpful factor in determining the interest rates of the debt issues they configure (Bolgün and Akçay, 2005, pp. 134-174).

3.1.2.3. Debt issuers

Companies, financial institutions, governments and municipalities use credit ratings to issue an independent view to the market about their creditworthiness and relative risk of issuance while issuing debt instruments.

The parties that issue debts inform the market about their relative creditworthiness and gain access to a wider investor environment. Besides, credit ratings shed light on the interest rate that borrowers will pay.

3.1.2.4. Businesses and financial institutions

Businesses and financial institutions that make credit-sensitive transactions can use their credit ratings when evaluating counterparty risk.

Thanks to the information provided by credit rating agencies, businesses can make easier decisions about potential partnerships and other business relationships.

3.1.2.5. Banks

Banks can use their credit ratings to calculate credit risk according to the Basel II agreement when calculating their capital adequacy.

In the standard method used in calculating credit risk, banks can use the notes of external credit institutions (Bolgün and Akçay, 2005, pp. 134-174).

3.2 RATIOS USED IN CREDIT RATING

The methodology of credit rating for companies includes different types of ratios which are mainly related to the financial structure of companies. To analyze and make credit rating more accurate, the ratios mentioned below are used for credit rating (JCR Eurasia Rating, 2017, pp. 1-5).

- ❖ Financial Structure Ratios
- ❖ Activity Ratios
- ❖ Cash Flow Ratios/Analysis
- ❖ Sensitivity to Foreign Currency Ratios

3.2.1 Financial Structure Ratios

Financial structure ratios are considered with 5 different parts (JCR Eurasia Rating, 2017, pp. 1-5);

- a. Financial situation Ratios
- b. Indebtedness Ratios
- c. Liquidity Ratios
- d. Profitability Ratios
 - i. The relationship Between Profit and Capital
 - ii. Relationship Between Profit and Sales
 - iii. Relationships between Profit and Financial Liabilities
- e. Growth Ratios

3.2.1.1 Financial situation ratios

These ratios are the indicators of the financial structure and long-term debt solvency of the companies. These ratios show how much of the assets are financed by foreign sources and how much of them are financed by equity, in general. The high share of equity in total resources reduces the risk for the lenders. Equity-foreign resource balance should be

ensured by considering the characteristics of the activities and sector of the companies. Details of ratios are listed below (Strickek, 1983, pp. 2-16);

- ❖ Total Equity/Total Assets
- ❖ Total Equity/Total Liabilities
- ❖ Tangible Fixed Assets(Net)/Total Equity
- ❖ Tangible Fixed Assets(Net)/Total Long-Term Liabilities
- ❖ Total Non-Current Assets/Total Equity
- ❖ Total Current Assets/Total Assets
- ❖ Total Non-Current Assets/Total Assets

3.2.1.2 Indebtedness ratios

These ratios are used to analysis whether there is debt solvency of companies and detection and interpretation of debt pressure on the financial structure. Details of ratios are listed below (Strickek, 1983, pp. 2-16);

- ❖ Leverage Ratio = Total Long Term and Short-Term Liabilities/ Total Assets
- ❖ Short Term Liabilities/ Total Sources (Assets)
- ❖ Long Term Liabilities/ Total Sources (Assets)
- ❖ Long Term Liabilities/ (Continuous Capital = Long Term Liabilities + Equity)
- ❖ Total Non-Current Assets / Total Long Term and Short-Term Liabilities
- ❖ Total Non-Current Assets / (Continuous Capital = Long Term Liabilities + Equity)
- ❖ Short Term Liabilities/ Total Long Term and Short-Term Liabilities
- ❖ Bank Loans (Including Interests) / Total Assets
- ❖ Short Term Bank Loans + Current Maturities of Long Term Credits and Accrued Interest/ Short Term Liabilities
- ❖ Bank Loans (Including Interests) / Total Long Term and Short-Term Liabilities

3.2.1.3 Liquidity ratios

These are the ratios that measure the power of companies to pay their short term liabilities. These ratios reveal whether the companies' net working capital is sufficient. In the analysis of an entity's short-term debt solvency, there is a close relationship between its liquid assets and its short-term foreign resources/liabilities. Details of ratios are listed below (Başkent Üniversitesi, 2015, pp. 1-46);

- ❖ Current Ratio (Current Assets / Short Term Liabilities)
- ❖ Acid-Test Rate ((Current Assets - (Inventories + Prepaid Expenses for Future Months + Other Current Assets)) / Short Term Liabilities)
- ❖ Cash Ratio ((Cash&Cash Equivalents) / Short Term Liabilities)
- ❖ Inventories / Current Assets
- ❖ Inventories / Total Assets
- ❖ Stock Dependency Ratio (Short Term Liabilities- (Cash&Cash Equivalents + Marketable Securities)) / Inventories
- ❖ Short Term Receivables (Trade and Other)/ Current Assets
- ❖ Short Term Receivables (Trade and Other)/ Total Assets

3.2.1.4 Profitability ratios

The ratios are used to analyze the relationships between activities and profitability and whether the profitability is sufficient according to total assets, equity, net sales volume, liability/financial expenses (Akdoğan and Tenker, 1997, pp. 1-32).

- i. The relationship Between Profit and Capital;

- ❖ Net Profit After Tax/ Total Equity
- ❖ Profit Before Tax / Total Equity
- ❖ Economic Profitability ((Financing Expense + Profit Before Tax) / Total Sources)
- ❖ Net Profit After Tax/ Total Assets
- ❖ Operating Profit / (Total Assets - Financial Fixed Asset)

- ❖ Cumulative Profitability Rate ($\text{Total Undistributed Profits} + \text{Reserves} / \text{Total Assets}$)

ii. Relationship Between Profit and Sales;

- ❖ Operating Profit / Net Sales
- ❖ Gross Sales Profit / Net Sales
- ❖ Net Profit After Tax / Net Sales
- ❖ Cost of Sales / Net Sales
- ❖ Operating Expenses/ Net Sales
- ❖ Financial Expenses / Net Sales

iii. Relationships between Profit and Financial Liabilities;

- ❖ $\text{Net Profit Before Tax} + \text{Financing Expenses} / \text{Financing Expenses}$
- ❖ $\text{Net Profit After Tax} + \text{Financial Expenses} / \text{Financial Expenses}$

3.2.1.5 Growth ratios

The growth ratios are the data related the growth of companies in terms of net profit margin, net sales, equity and assets comparing with other terms. Details of ratios are given below (Strichek, 1983, pp. 2-16);

- ❖ Net Profit Margin Growth
- ❖ Net Sales Growth
- ❖ Total Equity Growth
- ❖ Total Assets Growth

3.2.2 Activity Ratios

Activity ratios are used to measure whether the operating assets are used efficiently. For this purpose, relations are established between total assets or asset items and sales.

The following activity ratios emerge from the established relationships (Collett and Schell, 1992, pp. 7-42);

- ❖ Inventory Turnover Rate $(\text{Cost of Sales (Current Year)} / ((\text{Previous Year Inventory} + \text{Current Year Inventory}) / 2))$
- ❖ Receivable Turnover Rate $(\text{Net Sales} / \text{Total Trade Receivables})$
- ❖ Working Capital Turnover Rate $(\text{Net Sales} / \text{Current Assets})$
- ❖ Net Working Capital Turnover Rate $(\text{Net Sales} / (\text{Current Assets} - \text{Short Term Liabilities}))$
- ❖ Tangible Fixed Assets Turnover Rate $(\text{Net Sales} / \text{Net Tangible Fixed Assets})$
- ❖ Non-current Assets Turnover Rate $(\text{Net Sales} / \text{Total Non-Current Assets})$
- ❖ Equity Turnover Rate $(\text{Net Sales} / \text{Total Equity})$
- ❖ Assets Turnover Rate $(\text{Net Sales} / \text{Total Assets})$

3.2.3 Cash Flow Ratios/Analysis

These analyses are prepared to show how the companies generate cash from regular activities, financial activities and investment activities. Moreover, capital structure changes and needs according to the activities are analyzed termly by companies (Strichek, 1983, pp. 2-16).

- ❖ Income Cash Flow
- ❖ Capital Structure

3.2.4 Sensitivity To Foreign Currency Ratios

FX accounts related to sales or costs are directly affected by foreign currency changes and the sensivity of companies due to foreign currency change effect for the profitability and debt pressure should be analyzed if possible FX devaluations.

Ratios are listed below in terms of in balance and off balance due to FX accounts or commitments (JCR Eurasia Rating, 2017, pp. 1-5);

- ❖ In-Balance Sheet Position Ratio (Total FX Assets Total / Total FX Sources)
- ❖ Off-Balance Sheet Position Ratio (Total Off-Balance Sheet FX Assets / Total Off-Balance Sheet FX Liabilities)
- ❖ Total Position Ratio (Total In-Balance and Off-Balance Sheet FX Assets / Total In-Balance and Off-Balance Sheet FX Sources and Liabilities)

3.3 CREDIT RATING METHODS OR MODELS

In this section, the general information about linear probability model, logit model and Altman Z-Score model will be given which are utilized to analysis for credit rating calculations or making comments about financial strengths, probability of default, etc.

3.3.1. Linear Probability Model

The model where the dependent variable, which can take two values, is shown as a linear function of the independent variable or variables is called the linear probability model. Linear regression model; When $Y_i = \beta_0 + \beta_1 X_i + u_i$ is defined, Y_i will take values 0 or 1 (Özer, 2004, p. 67).

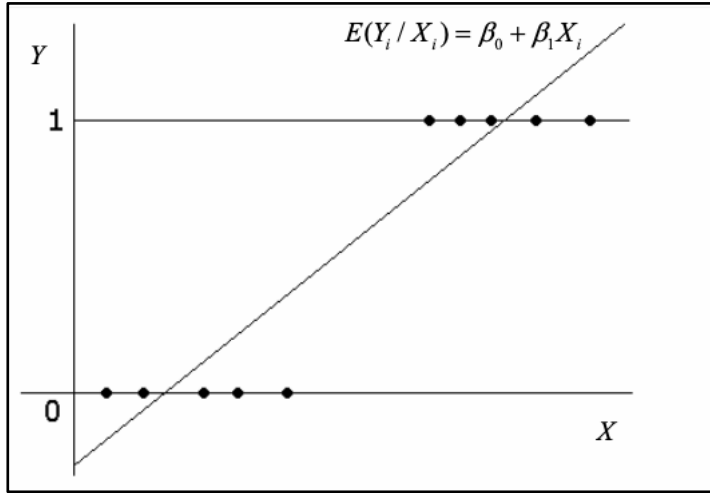
$Y_i = 1$ (choosing the first option)

$Y_i = 0$ (choosing the second option)

The dependent variable in the model indicates the possibility of choosing one of two options. So, when we express the probability of choosing the first option as P_i and the probability of choosing the second option ($1 - P_i$), the expected value of the dependent variable.

$$E(Y) = 1 \cdot (P) + 0 \cdot (1 - P) = P(Y_i = 1) = P_i. \quad (3.1)$$

Thus, $E(Y / X) = \beta_0 + \beta_1 X = P_i$ can be written. Linear probability model whose general structure is specified can be shown as follows from the formula (Cox, 1970, pp. 33-42).



As can be seen from the figure, Y can take two values such as 0 and 1. This situation of the variable will cause some problems in terms of the predicted model. These problems can be explained as follows.

In the linear probability model, error terms will take two values, such as the dependent variable (Cox, 1970, pp. 33-42):

$$\text{If } Y_i = 1, 1 = \beta_0 + \beta_1 X_i + \varepsilon_i \rightarrow \varepsilon_i = 1 - \beta_0 - \beta_1 X_i \quad (3.2)$$

$$\text{If } Y_i = 0, 0 = \beta_0 + \beta_1 X_i + \varepsilon_i \rightarrow \varepsilon_i = -\beta_0 - \beta_1 X_i \quad (3.3)$$

As can be seen, normality assumption will not be valid because error terms take two values. Error terms have a binomial distribution. However, if the normality assumption is not valid, it will not affect the estimation of the estimators. In addition, in large samples, the binomial distribution approaches the normal distribution.

In the linear probability model, since error terms can take two values, they have variance variance. We can show this as below (Cox, 1970, pp. 33-42):

$$\begin{aligned}
Var(\varepsilon_i) &= E(\varepsilon_i^2) = P(Y_i = 0)[- \beta_0 - \beta_1 X_i]^2 + P(Y_i = 1)[1 - \beta_0 - \beta_1 X_i]^2 \\
&= [1 - P(Y_i = 1)][P(Y_i = 1)]^2 + P(Y_i = 1)[1 - P(Y_i = 1)]^2 \\
&= [1 - P(Y_i = 1)][P(Y_i = 1)][P(Y_i = 1)[1 - P(Y_i = 1)]] \\
&= P(Y_i = 1)[1 - P(Y_i = 1)] \\
&= [-\beta_0 - \beta_1 X_i][1 - \beta_0 - \beta_1 X_i] \\
&= E(Y_i)[1 - E(Y_i)]
\end{aligned}$$

(3.4)

The changing variance problem can be solved using the weighted least squares method; but even in this case, hypothesis testing cannot be relied on since the error terms are not normally distributed.

The average of error terms in linear probability models is zero. $E(\varepsilon_i)$,

$$\begin{aligned}
E(\varepsilon_i) &= P(Y_i = 1)[1 - \beta_0 - \beta_1 X_i] + P(Y_i = 0)[- \beta_0 - \beta_1 X_i] \\
&= P(Y_i = 1)[1 - P(Y_i = 1)] + [1 - P(Y_i = 1)]P(Y_i = 1) = 0
\end{aligned}$$

(3.5)

This assumption is valid in the linear probability model (Cox, 1970, pp. 33-42).

In linear probability models, $E(Y_i | X_i)$ must take a value between 0 and 1 since it measures the probability of realization of Y_i . But even if the weighted least squares method is used, it is not guaranteed that Y_i s get values between 0 and 1. Two approaches have been proposed to solve this situation. The first is to accept values less than 0 as 0 and values greater than 1 as 1. But in this case, the estimates will be deviated. The second approach is to re-estimate the coefficients of the model based on the $0 \leq E(Y_i | X_i) \leq 1$ limitation. However, in this case, it cannot be guaranteed that the estimates will be deviant (Özer, 2004, p. 67).

The specificity coefficient (R^2) used as a measure of appropriateness of the estimation in regression models generally takes values between 0.2 and 0.6 in models with qualitative dependent variables; that is, it tends to be very small than 1. Since Y takes only two values, the Y values will be either on the X axis or on line 1. The coefficient of determination will never be able to adapt to the data distributed in this way.

All these problems we mentioned are solvable. But the biggest problem of the linear probability model stems from its logic. The linear probability model assumes that P_i is a linear function of X_i . In other words, it assumes the marginal effect as constant. In other words, every change in the X variable assumes that it will have the same effect on the Y variable. This assumption is also unrealistic. This problem is an insurmountable problem for the linear probability model and makes the use of the linear probability model meaningless. Since the linear probability model carries this insurmountable problem, instead of this model, we can use probability models where P_i does not have a linear function of X_i and P_i moves not to exceed the range of 0 and 1. Logistics distribution function and normal cumulative distribution functions are functions that carry these features and are frequently used in practice (Cox, 1970, pp. 33-42).

3.3.2. Logit Model

When the dependent variable is numerical/metric, parameter estimation can be made by applying the least squares method with the help of simple or multiple linear regression, and the cause-effect relationship between dependent/independent variable/variables can be examined. However, as in socio-economic issues, situations where the dependent variable is categorical are quite common. Logistic regression was proposed as an alternative to linear regression and discriminant analysis in the late 1960s and early 1970s and became available in statistical package programs in the early 1980s (Peng, Lee and, Ingersoll, 2002, pp. 3-14).

Logistic regression is preferred because the type of dependent variable is flexible, the findings can be interpreted easily and meaningfully, it can be analyzed with many statistical package programs such as SPSS, SAS, and there is no assumption of

conformity to normal distribution, ownership of covariance and continuity (Alpar, 2003, pp. 1-23). In addition, the main reason why logistic regression is popular in the world of statistics in recent years is the use of a logistic model to evaluate the odds ratio of estimators and to determine the probability of the result value based on independent variables (Hilbe, 2016, pp. 1-33).

In linear regression, residues show normal distribution with zero mean and fixed variance, while in logistic regression, residues show binomial distribution with zero mean and 1 (1 π) variance (Alpar, 2003, pp. 1-23). Odds in logistic regression; is the ratio of the probability of an event to the probability of that event. This ratio takes a value between zero (0) and infinite (∞);

Odds; $P / (1-P) = (\text{The occurrence of the event}) / (\text{Not the occurrence of the event})$

The nonlinear logistic regression function is linearized by taking the natural logarithm of odds thanks to logit transformation. Logit can take values between $-\infty$ and $+\infty$.

$$L = \ln\left(\frac{P}{1-P}\right) = \ln e^{(\beta_0 + \beta_1 X)} = \beta_0 + \beta_1 X \quad (3.6)$$

The estimated coefficients (β_0 , β_1) are measurements of changes in the ratio of probabilities (Hair, Black, Anderson, and Tatham, 2006, pp. 1-8).

In the linear model, the independent variable indicates how much a change in 1 unit in X causes the dependent variable, while in the logistic model, the independent variable shows how much change in 1 log in X causes the change.

3.3.3. Linear Discriminant Model- Altman Z-Score

One of the best-known models for predicting corporate financial failure or credit ratings for companies is the Altman Z-Score model. Studies of Altman (Altman, 1968, pp. 589-609) revealed that Z-Score and its versions predict corporate financial failure with a very

high degree of accuracy in American markets, in addition to emerging markets (Samarakoon and Hasan, 2003, pp. 2-82). The Z-Score, developed by Altman, is perhaps the most widely used model for predicting financial failure. The model was developed at a time when traditional ratio analysis lost popularity among academics. Using Altman multivariate discriminant analysis, he first determined 22 financial ratios in his studies on 66 companies, 33 of which were bankrupt and 33 financially healthy companies, then developed the model by reducing the number of variables to be used in the model as a result of statistical analyzes (Miller, 2009, pp. 12-73). 33 bankrupt companies in Altman's model have been identified among those covered by the American Bankruptcy Law. Firms with an asset value below USD 1 million are not included in the study. All 66 companies were selected from manufacturing companies (Meeampol, Lerskullawat, and Wongsorntham, 2014, pp. 25-27). However, many studies have shown that the model can be applied in other areas with small changes. The model is aimed at estimating financial failure and possible bankruptcy in the next two years with various accounting rates and market-based price data (Hayes, Hodge, and Hughes, 2010, pp. 2-52).

The model has been tested with the studies. Accordingly, the success rate was 72% for the two years before bankruptcy and 94% for the previous year (Altman, 1968, pp. 589-609). In the numerous tests carried out in the 31 years (until 1999) after the development of the model, it has been determined that the model (despite being classified in the range of 15-20% to non-bankrupt firms) with an accuracy of 80-90% until one year ago (Meeampol, Lerskullawat, and Wongsorntham, 2014, pp. 25-27). The Z-Score is shaped on a total of seven core values, six accounting and one market-based. These seven basic values are included in five ratios. The formula developed by Altman was met with great interest by practitioners. This is due to the fact that each rate reveals different credit views of the firm's operations. Liquidity, cumulative profitability, efficiency of assets, market-based financial leverage (borrowing) and capital adequacy are the topics of the five ratios (Miller, 2009, pp. 12-73). The ratios are given below:

X1: Net Working Capital/Total Assets

X2: Retained Earnings/Total Assets

X3: EBIT/Total Assets

X4: Market value of the shares/ Total Liabilities

X5: Total Net Sales/ Total Assets

The ratios used by Altman in his formula are multiplied by various coefficients (Altman, 2000, pp. 1-48):

$$Z\text{-Score} = 1.2 X1 + 1.4 X2 + 3.3 X3 + 0.6 X4 + 1.0 X5 \quad (3.7)$$

Figure 3.1: Altman Z-Score Formula

Altman Z Score formula = $1.2 \times \left(\frac{\text{Working Capital}}{\text{Total Assets}} \right) + 1.4 \times \left(\frac{\text{Retained Earnings}}{\text{Total Assets}} \right) + 3.3 \times \left(\frac{\text{Earnings before interest \& tax payment}}{\text{Total Assets}} \right) + 0.6 \times \left(\frac{\text{The equities market value}}{\text{Total Assets}} \right) + 0.999 \times \left(\frac{\text{Total Sales}}{\text{Total Assets}} \right)$

Source: Wall Street Mojo, Altman Z-Score, <https://www.wallstreetmojo.com/altman-z-score/> [accessed date: 02.03.2020].

The values resulting from the formula given above are compared with the limit values previously determined by Altman. If the Z-Score is lower than “1.81”, the enterprise complies with the bankruptcy profile. If the Z value is greater than “2.99”; the company has no financial difficulties (Hayes, Hodge, and Hughes, 2010, pp. 2-52). If the Z value is between these two values, there is a gray area according to Altman and it is very difficult to reveal the profile of the company. Altman states that 2.67 is the limit if analysts want to set a single value in the gray area. Accordingly, 2.67 values distinguish between successful and unsuccessful companies. The 2.67 limit minimizes misclassification (Gritta, Adrangi, Adams, and Tatyana, 2008, pp. 133-138). Altman made some changes to the formula. This is for the purpose of making the measurements healthier for companies

that are not listed on the stock exchange; X_4 = Market Value of The Shares/ Total Liabilities Altman included the rate given above in the new version of the formula. There was also a change in the coefficients due to the rate change. In this case, Z-Score; It is between the limits of $1.23 < Z < 2.99$ (Altman, 2000, pp. 1-48):

$$\text{Z-Score} = 0.717 X_1 + 0.847 X_2 + 3.107 X_3 + 0.420 X_4 + 0.998 X_5 \quad (3.8)$$

The second model, which was later updated with the first model developed by Altman, was not described as perfect models; on the contrary, a further change was made in 1993 as a result of evaluations such as sectoral characteristics, size of companies and the power of explaining the financial failure of the variables in the model. As part of this update, the sales revenue rate has been removed from the model. While the threshold value for the bankruptcy of the firms is determined as 1.10, the Z-Score value of the healthy firms is stated to be above 2.60. Altman has made some changes to the formula for the bankruptcy of service sector companies that are not involved in the manufacturing sector. The model developed for these companies is as follows (Hayes, Hodge, and Hughes, 2010, pp. 2-52):

$$\text{Z-Score} = 6.56 X_1 + 3.26 X_2 + 6.72 X_3 + 1.05 X_4 \quad (3.9)$$

Explanations of ratios in details:

i. Net Working Capital/Total Assets

Net working capital is the difference between the current assets of a company and its current liabilities. The value of a company's working capital determines its short-term financial health. A positive working capital means that a company can meet its short-term financial obligations, and still make funds available to invest and grow. In contrast, negative working capital means that a company will struggle to meet its short-term financial obligations because there are inadequate current assets.

ii. Retained Earnings/Total Assets

The retained earnings/total assets ratio shows the amount of retained earnings or losses in a company. If a company reports low retained earnings to total assets ratio, it means that the company is financing its expenditure using borrowed funds rather than funds from its retained earnings. It increases the probability of a company going bankrupt.

On the other hand, high retained earnings to total assets ratio shows that a company uses its retained earnings to fund capital expenditure. It shows that the company achieved profitability over the years, and it does not need to rely on borrowings.

iii. Earnings Before Interest and Tax (EBIT)/Total Assets

EBIT, a measure of a company's profitability, refers to the ability of a company to generate profits solely from its operations. The EBIT/Total Assets ratio demonstrates a company's ability to generate enough revenues to stay profitable and fund ongoing operations and make debt payments.

iv. Market Value of Equity/Total Liabilities,

The market value, also known as market capitalization, is the value of a company's equity. It is obtained by multiplying the number of outstanding shares by the current price of stocks.

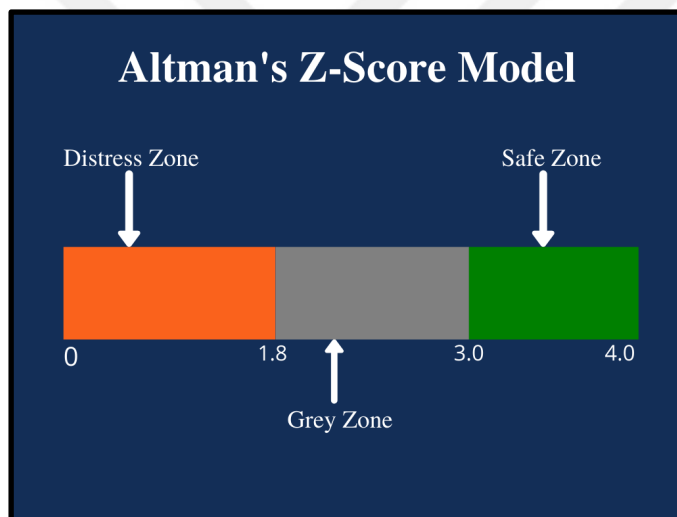
The market value of the equity/total liabilities ratio shows the degree to which a company's market value would decline when it declares bankruptcy before the value of liabilities exceeds the value of assets in the balance sheet. A high market value of equity to total liabilities ratio can be interpreted to mean high investor confidence in the company's financial strength.

v. Net Sales/Total Assets

The sales to total assets ratio shows how efficiently the management uses assets to generate revenues vis-à-vis the competition. A great value over net sales to total assets ratio is translated to mean that the management requires a small investment to generate sales, which increases the overall profitability of the company.

In contrast, a low or falling sales to total assets ratio means that the management will need to use more resources to generate enough sales, which will reduce the company's profitability.

Figure 3.2: Altman's Z-Score Model Results



Source: Corporate Finance Institute, Altman's Z-Score Model Results.
<https://corporatefinanceinstitute.com/resources/knowledge/credit/altmans-z-score-model/>
[accessed date: 07.02.2020].

3.4 CREDIT RATING STANDARDS OR METHODOLOGY, FACTORS AFFECTING CREDIT WORTHINESS

While credit rating grades are given, credit rating agencies may affect past and future financial conditions, management quality, operational performance of the issuer or guarantor, special issues related to a particular issue or guarantee, the bond's bond with other liabilities of the institution, as well as the financial strength and credit quality of the

issuer examines political and economic developments. In the case of structured finance, the quality and integrity of the legal structure of the assets under the guarantee of the parent company are also reviewed. In banking, a sector historically secured by states or large partners, the potential strength of such support is also taken into account (JCR Eurasia Rating, 2017, pp. 1-5).

3.4.1. Other Issues And Analysis For Credit Rating

3.4.1.1. Country risk

Political, social and economic indicators are taken into account when examining the country risk.

Political Indicators: Political parties law and status, public expectations and realization status, status of ideological groups, order and future of the law, bureaucracy, foreign relations (International integration, relations with neighbors, relations with international organizations, the influence of foreign political forces, the strategic position of the country) (JCR Eurasia Rating, 2017, pp. 1-5).

Social Indicators: population growth, distribution, density, homogeneity, per capita income, wealth distribution, unemployment rate, social security systems (JCR Eurasia Rating, 2017, pp. 1-5).

Economic indicators: internal / external / total debt loads, balance of payments, foreign exchange reserves, flexibility of balance of payments, economic Management (Monetary and Fiscal Policies), the future of the economy (Energy resources, Mineral Resources, the future of exports) (JCR Eurasia Rating, 2017, pp. 1-5).

3.4.1.2. Sector risk

Sectoral competitiveness in the local and international area, capital density, openness and sensitivity to cyclical fluctuations, conditions and facilities for entering the sector, the

importance of the sector in the economy, sectoral legal regulations, technological level, cost factors, the effects of developments in the sector to the company. The basic data belonging is taken into consideration in the creation of a grade.

3.4.1.3. Branch credit valuation-activity status

Legal, social, demographic and technological variables that may occur in the operating environment are examined, and the opportunities and risks created by them are tried to be revealed.

Geographical diversity of company activities, sectoral growth, tendency, plans that can affect or protect competitiveness, decisions of merger or acquisition, utilization rate of capacity across the industry, vulnerability of the company from possible price competition, the phase it has come in during the life of the company, market saturation related to its products and services ratio and indicators, capacity increase and needs for new investments and possibilities of equity entry / increase that can meet these needs.

3.4.1.4. Subjective credit valuation - market status

Analyzing the market situation by highlighting factors such as its resilience to competitive pressures in product, price, technology and other fields, market share, product / service dominance, advantages that provide company effectiveness, or disadvantages that may disrupt this effectiveness, product diversity, branch-supplier, marketing-sales networks. it is.

3.4.1.5. Subjective credit valuation, partners, senior management

Monitored strategy, vision determinations, short-term long-term corporate goals, determined risk tolerance levels, funding approaches, development trend of past financial results, levels of entrepreneurship-conservatism, management approaches, personnel policies, work experiences, morale, plans for the future of the company, organization and

criteria such as control and monitoring powers on the enterprise are important issues in senior management evaluation.

Subjective credit worthiness, the number of years the company has been operating and the duration of the activity at the same address.

It is thought that the firms' operating times are short and that they are new at the same address increase the uncertainty coefficient and therefore it is riskier.

3.4.1.6. Subjective credit valuation, accounting standards

Companies' financial reports must have undergone independent auditing. Although the audit of the companies' financial statements is not included in the scope of the rating, the accounting policies and procedures are examined, and their effects on the company performance and the extent to which they reflect the performance are evaluated.

4. AN APPLICATION ON COMPANIES OPERATES ABOUT COAST HOTEL MANAGEMENT

This part consists the data of companies operating in coast hotel management, financial ratios of companies, the ratios and method which will be used for credit rating analysis for the companies in study. The ratios of companies from Mediterranean Region of Turkey (mainly hotels in Antalya and few hotels in Muğla) are choosed to analysis for this study due to analyze how coast hotel management activities are affected year by year and how credibility of companies and credit rating analysis changes and what kind of comments can be made according to financial ratios with Altman Z-Score model.

To show how the companies operating in coast hotel management sector are affected as financially and how we can analyze the companies in sector with their financial ratios and how we can decide the credit ratings of companies over financial ratios are aimed. Finally, we will quickly decide about their credibility to make financial evaluations for banks and industry. After obtaining the information about the credibility of companies, approuch of sector and banks to companies would be clearer to establish and maintain a commercial relationship, determine working conditions for future periods. All reports of tourism agencies and institutions, and internet resources were utilized for this study. Besides Altman Z-Score model, a different model will be used to analyze and make comments about companies.

4.1. INTRODUCTION OF COLLECTED DATA

In our study, we obtained 56 different ratios/data of 30 different companies for last 4 terms including 2016 year-end, 2017 yer-end, 2018 year-end and 2019/September which operates in coast hotel management sector in Turkey. Due to the privacy, no name/title of companies are explained. Moreover, the data includes the average ratios of all companies as sector average ratios for each term.

Moreover, 5 financial ratios had been used for Altman Z-Score model which is defined below:

X1: Net Working Capital/Total Assets

X2: Retained Earnings/Total Assets

X3: EBIT/Total Assets

X4: Market value of the shares/ Total Liabilities

X5: Total Net Sales/ Total Assets

The ratios used by Altman in his formula are multiplied by various coefficients (Altman, 2000):

$$\text{Z-Score} = 1.2 \text{ X1} + 1.4 \text{ X2} + 3.3 \text{ X3} + 0.6 \text{ X4} + 1.0 \text{ X5} \quad (4.1)$$

Details of 56 ratios/data obtained listed below which are used in our analysis for other our model:

Table 4.1: The ratios or data used in correlation study

1	EUR vs TL (Year-End) 1 EUR equivalence
2	EUR vs TL (Average) 1 EUR equivalence
3	Occupancy Ratio
4	Inflation Rate
5	EBITDA Ratio
6	Net Financial Debt/EBITDA
Financial Situation Ratios	
7	❖ Total Equity/Total Assets
8	❖ Total Equity/Total Liabilities
9	❖ Tangible Fixed Assets(Net)/Total Equity
10	❖ Tangible Fixed Assets(Net)/Total Long Term Liabilities
11	❖ Total Non-Current Assets/Total Equity
12	❖ Total Current Assets/Total Assets
13	❖ Total Non-Current Assets/Total Assets

	Indebtedness Ratios
14	❖ Leverage Ratio = Total Long Term and Short Term Liabilities/ Total Assets
15	❖ Short Term Liabilities/ Total Sources (Assets)
16	❖ Long Term Liabilities/ Total Sources (Assets)
17	❖ Long Term Liabilities/ (Continuous Capital = Long Term Liabilities + Equity)
18	❖ Total Non-Current Assets / Total Long Term and Short Term Liabilities
19	❖ Total Non-Current Assets / (Continuous Capital = Long Term Liabilities + Equity)
20	❖ Short Term Liabilities/ Total Long Term and Short Term Liabilities
21	❖ Bank Loans (Including Interests) / Total Assets
22	❖ Short Term Bank Loans + Current Maturities of Long Term Credits and Accrued Interest/ Short Term Liabilities
23	❖ Bank Loans (Including Interests) / Total Long Term and Short Term Liabilities

	Liquidity Ratios
24	❖ Current Ratio (Current Assets / Short Term Liabilities)
25	❖ Acid-Test Rate ((Current Assets - (Inventories + Prepaid Expenses for Future Months + Other Current Assets)) / Short Term Liabilities)
26	❖ Cash Ratio (Cash&Cash Equivalents / Short Term Liabilities)
27	❖ Inventories / Current Assets
28	❖ Inventories / Total Assets
29	❖ Stock Dependency Ratio (Short Term Liabilities- (Cash & Cash Equivalents + Marketable Securities)) / Inventories
30	❖ Short Term Receivables (Trade and Other)/ Current Assets
31	❖ Short Term Receivables (Trade and Other)/ Total Assets

	Profitability Ratios
	<i>i. The relationship Between Profit and Capital;</i>
32	❖ Net Profit After Tax/ Total Equity
33	❖ Profit Before Tax / Total Equity
34	❖ Economic Profitability ((Financial Expense + Profit Before Tax) / Total Sources)
35	❖ Net Profit After Tax/ Total Assets
36	❖ Operating Profit / (Total Assets - Financial Fixed Asset)
37	❖ Cumulative Profitability Rate (Total Undistributed Profits + Reserves / Total Assets)
	<i>ii. Relationship Between Profit and Sales;</i>
38	❖ Operating Profit / Net Sales
39	❖ Gross Sales Profit / Net Sales
40	❖ Net Profit After Tax / Net Sales
41	❖ Cost of Sales / Net Sales
42	❖ Operating Expenses/ Net Sales
43	❖ Financial Expenses / Net Sales
	<i>iii. Relationships between Profit and Financial Liabilities;</i>
44	❖ Net Profit Before Tax + Financing Expenses / Financing Expenses
45	❖ Net Profit After Tax+ Financial Expenses / Financial Expenses

	Growth Ratios
46	❖ Net Profit Margin Growth
47	❖ Net Sales Growth
48	❖ Total Equity Growth
49	❖ Total Assets Growth

	Activity Ratios
50	❖ Receivable Turnover Rate (Net Sales / Total Trade Receivables)
51	❖ Working Capital Turnover Rate (Net Sales / Current Assets)
52	❖ Net Working Capital Turnover Rate (Net Sales / (Current Assets- Short Term Liabilities))
53	❖ Tangible Fixed Assets Turnover Rate (Net Sales / Net Tangible Fixed Assets)
54	❖ Non-current Assets Turnover Rate (Net Sales / Total Non-Current Assets)
55	❖ Equity Turnover Rate (Net Sales / Total Equity)
56	❖ Assets Turnover Rate (Net Sales / Total Assets)

4.2. HOTELS AND COMPANIES IN THE DATA

In our study, we use the financial data of 30 companies which operates in coast hotel management sector in Turkey. 30 companies include over 70 hotels (with 4 or 5 stars) in their financials and hotels are mainly in Antalya and Muğla. The data includes the ratios of last 4 terms including 2016 year-end, 2017 year-end, 2018 year-end and 2019/September.

Also, total ratios include fixed ratios for all companies.

Table 4.2: The fixed ratios or data used in correlation study for each year/term

		2016	2017	2018	2019-09
1	EUR vs TL (Year-End) 1 EUR equivalence	3,7099	4,5155	6,028	6,1836
2	EUR vs TL (Average) 1 EUR equivalence	3,3377	4,1139	5,6772	6,3284
3	Inflation Rate	8,53%	11,92%	20,30%	8,42%

4.3. LOCAL REPRESENTATION OF ANTALYA AND HOTELS

Antalya, which has a total of 899 accommodation facilities certified by the Ministry of Culture and Tourism, has 407 hotels and resorts with 5-stars. 42% of 1.200.000 licensed bed by he Ministry of Culture and Tourism is in Antalya. There are 232.361 rooms and 500.583 beds in 889 facilities in Antalya (the number of beds licensed by Ministry abd Municipality is 628.000). Antalya has the first place in Turkey and third place in Europe that hosts the most tourists between other locaions/cities. The number of 5-stars hotels and resorts in Antalya is larger than all 5-stars hotels and resorts in Spain (in Spain, there are approximately 400) (Laleli, 2000, p.1).

Figure 4.1: Local representation of Antalya and Muğla, General Hotel Areas in Mediterranean Region of Turkey



Source: Orange Smile-Hotel Reservation System

http://www.orangesmile.com/common/img_city_maps/antalya-map-0.jpg [accessed date: 01.05.2020]

Figure 4.2: Antalya Region (Coast Hotel Areas of Turkey)



Source: Google Maps

4.4. METHOD AND APPLICATION

4.4.1. Altman Z-Model

Five ratios for the years/terms of 2016, 2017, 2018, and 2019/09 were utilized for analysis. For each year/term, Altman Z-Score of companies had been calculated and potentials of companies for defaults were analyzed. Related comments had been presented over Altman Z-Score.

The ratios and formula of Altman Z-Score;

X1: Net Working Capital/Total Assets

X2: Retained Earnings/Total Assets

X3: EBIT/Total Assets

X4: Market value of the shares/ Total Liabilities

X5: Total Net Sales/ Total Assets

The ratios used by Altman in his formula are multiplied by various coefficients (Altman, 2000, pp. 1-48):

$$\text{Z-Score} = 1.2 X_1 + 1.4 X_2 + 3.3 X_3 + 0.6 X_4 + 1.0 X_5 \quad (4.2)$$

4.4.2. The Model Including The Analysis On Financial Ratios According To The Affects On EBITDA

56 ratios including 3 fixed ratios for all companies and 53 financial ratios belonging to companies for the years/terms of 2016, 2017, 2018 and 2019/09 had been utilized in our correlation analysis.

Firstly, 55 ratios (excluding EBITDA ratio of companies) had been analyzed how they affects EBITDA ratio. According to affectness on EBITDA ratio, weight of affectness of 55 financial ratios had been analyzed and found.

The steps of correlation analysis over EBITDA;

- Firstly, the average ratio for 30 companies is calculated for each year/term,
- Secondly, according to the average ratio, it was determined that the original ratios of the companies correspond to what percentage over average ratios,
- According to correlation matrix, correlation effect ratio of each ratios on EBITDA ratio is calculated,
- New effect ratios are calculated again over correlation ratios, average ratios, original ratios,
- All new ratios are collected except EBITDA and the sum is written for all companies,
- According to sum, new ranking between companies is realized,
- Newly created ranking over new potential EBITDA, and original ranking over realized EBITDA is compared for each year/term,

- If realized EBITDA ranking is worse than calculated EBITDA ranking, it is called “Below Potential”, if realized EBITDA ranking is better than calculated EBITDA ranking, it is called “Above Potential”, if both rankings are same, it is called “Potential To Be”

4.5. PRESENTATION AND DEMONSTRATION OF THE APPLICATION

4.5.1. Hypothesis

H₀: Profitability ratio is expected to **have not** a significant relationship to company’s failure or success.

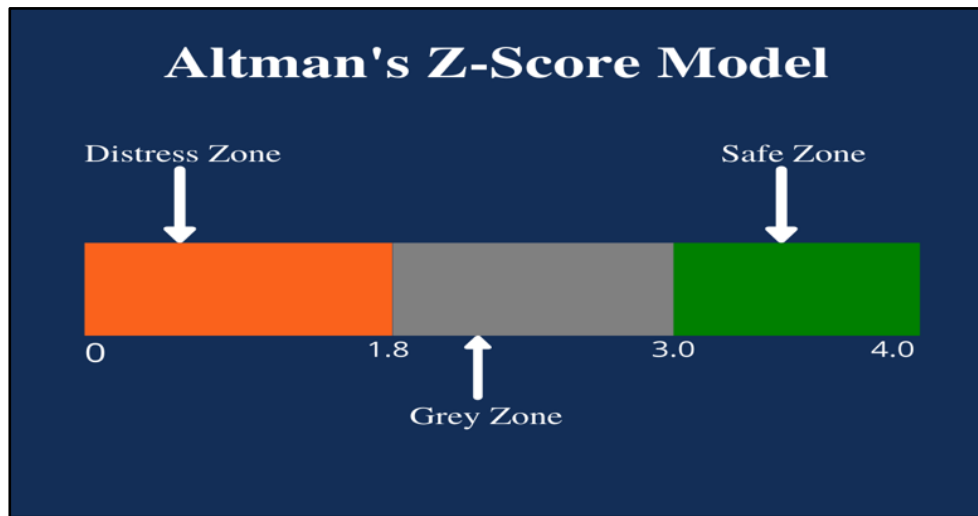
H₁: Profitability ratio is expected to **have** a significant relationship to company’s failure or success.

Whether the rate of profitability has an important relationship with the company's failure or success (the accuracy of the hypotheses) was tested by the analyzes.

4.5.2. Altman Z-Score Model Results

After calculating Altman Z-Score for all companies and classifying according to Picture 6 which shows zone intervals for companies over Altman Z-scores. The result shows the potential of companies for default for coming terms. In this calculation, the majority of companies are seen to have potentials for default in 2016 due to the negative effect of economic crisis in tourism sector. After recovering the crisis effect after 2017 and 2018, the majority of companies has a place in “Grey Zone”. This shows that how the companies recover in tourism sector after an economic crisis. As seen in calculations of Altman Z-scores, at least 2 years are need for reovering in tourism sector.

Figure 4.3: Altman's Z-Score Model Results



Source: Corporate Finance Institute, Altman's Z-Score Model Results
<https://corporatefinanceinstitute.com/resources/knowledge/credit/altmans-z-score-model/>
 [accessed date: 07.02.2020]

Table 4.3: Altman Z-Score Results of 30 Companies

Altman Z-Score model results	Years/Terms			
	2016	2017	2018	2019-09
Company 1	1,31	1,57	2,09	2,07
Company 2	0,05	0,49	1,42	1,83
Company 3	0,01	0,92	2,12	2,08
Company 4	0,80	1,01	1,49	1,82
Company 5	0,22	0,58	1,27	1,69
Company 6	0,09	0,88	1,06	1,54
Company 7	0,84	1,06	2,02	1,82
Company 8	1,95	2,38	3,38	3,38
Company 9	1,16	1,78	2,06	3,09
Company 10	1,23	1,49	1,72	1,86
Company 11	1,52	1,40	1,41	1,81
Company 12	0,78	0,64	1,16	1,80
Company 13	0,58	0,56	2,18	2,16
Company 14	0,68	1,11	2,25	2,19
Company 15	0,80	0,86	1,71	2,01
Company 16	0,42	0,75	2,14	2,86
Company 17	0,07	0,46	0,99	1,47
Company 18	1,29	1,46	2,66	2,49
Company 19	0,23	0,61	1,33	1,81
Company 20	0,52	1,15	1,56	1,96
Company 21	0,55	0,89	1,45	1,83
Company 22	0,29	0,45	1,63	1,80
Company 23	0,55	0,79	1,45	1,80
Company 24	0,85	1,13	2,56	2,36
Company 25	0,53	0,90	1,51	1,82
Company 26	0,40	0,56	1,40	1,67
Company 27	0,40	0,70	1,26	1,59
Company 28	2,04	2,22	3,16	3,44
Company 29	1,47	1,62	1,89	2,08
Company 30	0,90	1,37	2,12	2,05
Average	0,75	1,06	1,81	2,07

For the companies in “Distress Zone”, Working Capital/Total Assets, Retained Earnings/Total Assets, EBIT/Total Assets has negative means which indicates that the companies 5, 6, 17, 26, and 27 are low which indicates that - their debt level is higher than their total assets, they do not have enough retained earnings why the companies failing while the Market Value of Shares/Total Liabilities and Net Sales/Total Assets are on the positive side. On the contrary, all five ratios under the “Safe or Grey Zone” companies are all on the positive side which shows their strong predicting ability and indicates that the independent variables for the companies in “Safe and Grey Zone” are clearly stronger than the companies in “Distress Zone”. Overall, based on the results shown above as Altman Z-Score result, it can be seen that the mean for all the financial ratios for the “Distress Zone” companies are lower than the “Safe or Grey Zone” companies. Also, the difference between the two set of means are significantly large which indicates that they are good discriminators. However, when there is no significant difference between the both set of means, carrying out the analysis won’t be worthwhile. Given the results shown it is safe to say that the “Safe or Grey Zone” companies have shown that they have better potential in sustaining for a longer period.

4.5.3. Correlation Analysis Results

In correlation analysis, using the financial ratios of companies, we calculate the potential EBITDA generation capacities of companies, also it is a kind of result how they had responded as financials after 2016 crisis.

Table 4.4: Correlation Study Results of 30 Companies

Company/Years	EBITDA Ranking (realized) for Years				EBITDA Ranking (calculated) for Years				Comments for Years			
	2016	2017	2018	2019-09	2016	2017	2018	2019-09	2016	2017	2018	2019-09
Company 1	21	15	17	16	18	7	19	16	Below Potential	Below Potential	Above Potential	Potential To Be
Company 2	15	9	14	26	9	26	22	19	Below Potential	Above Potential	Above Potential	Below Potential
Company 3	30	1	1	4	27	12	18	9	Below Potential	Above Potential	Above Potential	Above Potential
Company 4	23	11	13	18	20	27	7	17	Below Potential	Above Potential	Below Potential	Below Potential
Company 5	28	12	29	28	26	19	26	25	Below Potential	Above Potential	Below Potential	Below Potential
Company 6	26	30	27	30	4	29	27	24	Below Potential	Below Potential	Potential To Be	Below Potential
Company 7	22	21	12	13	11	3	30	14	Below Potential	Below Potential	Above Potential	Above Potential
Company 8	4	25	23	23	5	14	9	4	Above Potential	Below Potential	Below Potential	Below Potential
Company 9	11	17	30	3	12	22	17	1	Above Potential	Above Potential	Below Potential	Below Potential
Company 10	14	26	25	24	15	6	24	15	Above Potential	Below Potential	Below Potential	Below Potential
Company 11	2	7	19	21	3	18	23	11	Above Potential	Above Potential	Above Potential	Below Potential
Company 12	1	2	4	6	21	17	28	18	Above Potential	Above Potential	Above Potential	Above Potential
Company 13	17	27	6	15	13	16	4	8	Below Potential	Below Potential	Below Potential	Below Potential
Company 14	16	23	16	11	10	30	1	3	Below Potential	Above Potential	Below Potential	Below Potential
Company 15	9	19	11	8	6	13	16	10	Below Potential	Above Potential	Above Potential	Above Potential
Company 16	5	3	2	1	8	11	13	2	Above Potential	Above Potential	Above Potential	Above Potential
Company 17	29	22	15	10	1	21	20	27	Below Potential	Below Potential	Above Potential	Above Potential
Company 18	7	5	3	2	30	8	3	5	Above Potential	Above Potential	Potential To Be	Above Potential
Company 19	27	28	24	27	25	2	12	21	Below Potential	Below Potential	Below Potential	Below Potential
Company 20	12	13	22	25	7	28	25	12	Below Potential	Above Potential	Above Potential	Below Potential
Company 21	3	10	8	9	17	20	2	23	Above Potential	Above Potential	Below Potential	Above Potential
Company 22	24	18	21	22	28	25	10	28	Above Potential	Above Potential	Below Potential	Above Potential
Company 23	13	6	9	12	24	24	5	20	Above Potential	Above Potential	Below Potential	Above Potential
Company 24	25	29	18	20	22	10	8	30	Below Potential	Below Potential	Below Potential	Above Potential
Company 25	19	8	10	14	23	23	6	22	Above Potential	Above Potential	Below Potential	Above Potential
Company 26	18	14	7	5	14	15	14	26	Below Potential	Above Potential	Above Potential	Above Potential
Company 27	20	16	20	19	2	5	11	29	Below Potential	Below Potential	Below Potential	Above Potential
Company 28	6	24	26	17	29	9	15	6	Above Potential	Below Potential	Below Potential	Below Potential
Company 29	10	20	28	29	16	1	21	13	Above Potential	Below Potential	Below Potential	Below Potential
Company 30	8	4	5	7	19	4	29	7	Above Potential	Potential To Be	Above Potential	Potential To Be

4.5.4. Both Model Results

Both model results had been prepared to find common comments for companies according to Altman Z-score results and correlation analysis-EBITDA calculation results. The comments were specified in conclusion part of our study.

Table 4.5: Both Model Results of 30 Companies

Company/Years	EBITDA Ranking (realized) for Years				EBITDA Ranking (calculated) for Years				ALTMAN Z-SCORE Rankings for Years			
	2016	2017	2018	2019-09	2016	2017	2018	2019-09	2016	2017	2018	2019-09
Company 1	21	15	17	16	18	7	19	16	5	5	10	11
Company 2	15	9	14	26	9	26	22	19	29	28	22	17
Company 3	30	1	1	4	27	12	18	9	30	15	9	9
Company 4	23	11	13	18	20	27	7	17	12	14	19	19
Company 5	28	12	29	28	26	19	26	25	26	25	26	26
Company 6	26	30	27	30	4	29	27	24	27	18	29	29
Company 7	22	21	12	13	11	3	30	14	11	13	12	18
Company 8	4	25	23	23	5	14	9	4	2	1	1	2
Company 9	11	17	30	3	12	22	17	1	8	3	11	3
Company 10	14	26	25	24	15	6	24	15	7	6	14	15
Company 11	2	7	19	21	3	18	23	11	3	8	23	22
Company 12	1	2	4	6	21	17	28	18	14	23	28	24
Company 13	17	27	6	15	13	16	4	8	16	27	6	8
Company 14	16	23	16	11	10	30	1	3	15	12	5	7
Company 15	9	19	11	8	6	13	16	10	13	19	15	13
Company 16	5	3	2	1	8	11	13	2	21	21	7	4
Company 17	29	22	15	10	1	21	20	27	28	29	30	30
Company 18	7	5	3	2	30	8	3	5	6	7	3	5
Company 19	27	28	24	27	25	2	12	21	25	24	25	21
Company 20	12	13	22	25	7	28	25	12	20	10	17	14
Company 21	3	10	8	9	17	20	2	23	17	17	20	16
Company 22	24	18	21	22	28	25	10	28	24	30	16	25
Company 23	13	6	9	12	24	24	5	20	18	20	21	23
Company 24	25	29	18	20	22	10	8	30	10	11	4	6
Company 25	19	8	10	14	23	23	6	22	19	16	18	20
Company 26	18	14	7	5	14	15	14	26	23	26	24	27
Company 27	20	16	20	19	2	5	11	29	22	22	27	28
Company 28	6	24	26	17	29	9	15	6	1	2	2	1
Company 29	10	20	28	29	16	1	21	13	4	4	13	10
Company 30	8	4	5	7	19	4	29	7	9	9	8	12

	ALTMAN Z-SCORE	CORRELATION	RELATIONSHIP
Company 1	With the partial recovery in 2017 in the company, the effect of the crisis in 2016 appeared parallel to the sector, it is observed that the company, which has been observed to recover in 2018 and 2019, may experience problems in terms of operation in possible crises.	With the partial recovery in 2017 in the company, the effect of the crisis in 2016 appeared parallel to the sector, it is observed that the company, which has been observed to recover in 2018 and 2019, may experience problems in terms of operation in possible crises.	Moderate
Company 2	The company still try to recover the 2016 year crisis effect	The company still try to recover the 2016 year crisis effect	Strong
Company 3	With the partial recovery in 2017 in the company, the effect of the crisis in 2016 appeared parallel to the sector, it is observed that the company, which has been observed to recover in 2018 and 2019, may experience problems in terms of operation in possible crises.	With the partial recovery in 2017 in the company, the effect of the crisis in 2016 appeared parallel to the sector, it is observed that the company, which has been observed to recover in 2018 and 2019, may experience problems in terms of operation in possible crises.	Strong
Company 4	The company still try to recover the 2016 year crisis effect	The company still try to recover the 2016 year crisis effect	Strong
Company 5	The company still try to recover the 2016 year crisis effect	The company still try to recover the 2016 year crisis effect	Strong
Company 6	The company still try to recover the 2016 year crisis effect	The company still try to recover the 2016 year crisis effect	Strong
Company 7	The company still try to recover the 2016 year crisis effect	It is hard to compensate possible crisis for the company	Moderate
Company 8	The company has strong financials to compensate crisis effects	Despite below potential, the company has still strong financials	Moderate
Company 9	The company has the potential to recover quickly after the crisis	Despite below potential, the company has still strong financials. Recovering quickly is a kind result of "above potential" in 2016 and 2017	Strong
Company 10	The company still try to recover the 2016 year crisis effect	If the company realizes "potenatual to be", should recover crisis effect faster than current position.	Strong

4.5.5. Hypothesis Result:

If Altman Z-Score and our Correlation study relationships are compared, 14 companies show that profitability helps The Altman Z-Score increases, 13 companies shows profitability has similar effect with other ratios, 3 companies show us the no effect is seen. If we think about 27 companies, the effectness of profitability ratio on company's failure or success, with %90 accuracy ratio, the company's profitability affects the success in direct proportion. Therefore, the null hypothesis can be rejected, which means that there is a significant relationship between the variables specified for the companies in question and H1 cannot be rejected.



5. CONCLUSIONS AND RECOMMENDATIONS

5.1. CONCLUSIONS

Since the second half of the 20th century, tourism has become one of the fastest growing and expanding sectors in the world economy. Tourism is often used as a tool for regional or national development, like many other industries. The tourism sector has taken its place as an important factor that plays a role in generating income, business and tax revenues, alleviating the balance of payments problems and contributing to regional and national economic developments.

Turkey's active foreign tourism in particular have started to show a significant improvement from the 1980s and provide a very large contribution to the economy has become one of the sources of income. The tourism sector, which has been rising over the years, will continue to take an important place in the Turkish economy due to its dynamics, employment and commercial relations.

As in every sector, the issues affecting the tourism sector have started to appear over time, and it has been observed that especially the world economies and the political relations between the countries are the main factors affecting the sector. In particular, the importance of economic and political relations between our countries in the tourism sector mainly visitors from countries with which Turkey has been raised is the level that will directly affect the industry in different periods. Regardless of the relations between the countries, it has been observed that the economic or political crises in countries where visitors come from also affect the tourism sector. In particular, the recent history of political crisis in the sector crises of Europe and in Turkey's political relations and their experience has been shown to directly affect. Nearby period beginning at the end of 2015 and continuing in 2016, Turkey-Russia, Turkey-Germany political crises, terrorist attacks and strokes events after the tourism sector seen in Turkey has received a serious blow, after being in recovery of 2017 was able to recover barely into the season of 2018.

In this study, along with segregation as a city hotel and coast hotel business in the tourism sector, coast hotel management companies were conducted. Turkey's seaside leading coastal hotel management areas are Antalya and Mugla and in our study 30 companies from coast hotel management area with totally over 70 hotels had been analyzed regarding the credit ratings of the firm on the financial ratios of 2016-2017-2018-2019 / 09 have been made. Altman Z-score model, which is a popular method, was used in the study, and a correlation study prepared by us was added with the use of 56 ratios belonging to companies that are thought to support the relevant Altman Z-Score model. At the end of the study, it was observed that many firms experienced a financially troubled period and had potential for default due to the impact of the 2016 crisis. In 2017, parallel to the tourism sector, where partial improvements were observed, improvements were observed in the financial ratios of the companies. In 2018 and 2019, as the tourism sector started to return to its current potential structure, it was observed that companies started to have no problems in their activities in general. It was observed that some firms could not show their full potential due to the 2016 crisis, some firms could produce EBITDA over potential with solutions such as low price with high occupancy at the time of crisis, turning to different tourist portfolios, and activities continue in the normal flow of some firms.

Considering Altman Z-scores and correlation study results for 30 companies for the trends for the years 2016, 2017, 2018, and 2019/09, the comments of us are shared below;

- The companies 8, 9, 16, 18, 28 are in safe positions for both Altman Z-Score and correlations studies,
- The companies 1, 3, 13, 14, 29 are in good positions for both Altman Z-Score and correlations studies,
- The companies 2, 4, 10, 11, 12, 19, 20, 21, 23, 25 are in mediocre positions for both Altman Z-Score and correlations studies,
- The companies 5, 6, 17 are not in problematic position for both Altman Z-Score and correlations studies,
- The companies 7, 15, 22, 24, 26, 27, 30 are seen in different positions in both Altman Z-Score and correlations studies. Details are given below;

- The companies 22, 24 have better results in Altman Z-Score than Correlation Study,
- The companies 26, 27 have better results in Correlation Study than Altman Z-Score,
- The companies 7, 30 have different results for only the year 2018 for both studies, on the other hand, the companies are in good positions for both Altman Z-Score and correlations studies,

As a result of study and comments for the companies and studies, the accuracy rate of study is seen %80 according the trends of ratios of companies between the terms 2016/12-2019/09.

During our study, a new problem that may cause a crisis in the tourism sector was brought to the agenda in 2020, and the health problem affecting the whole world as a Covid-19 outbreak directly affected the tourism sector. The cross-country flight bans along with the rapid spread of the disease among humans in Turkey at the end of the first quarter, overall the hotel beachfront hotel business began operations in April and May led to the closure of the firms in their hotel. Along with the reservation and flight cancellations, the issue that returned to the crisis in the tourism sector directly affected all hotel operators. Although the impact of the crisis has not been fully known to the sector yet, it is stated by the authorities that the problem may affect the whole year and 2021, and that companies in the tourism sector may enter a new period when they may need financial support. The issues mentioned in the comments at the end of our study increase its importance in this context.

As a result, profitability is a kind of indicator about the financial strength of companies and also their potential having probability of default or not. Considering both the Altman Z-Score model and the EBITDA based correlation study prepared by us, comments were made that can help the credibility of the companies, and the comments of our study are also shared in detail below with showing the harmony between both studies/models.

5.2. RECOMMENDATIONS

This work can be further developed in many areas in the future. First, researchers interested in this subject area may try to develop a prediction model for small businesses, non-public companies, instead of focusing on public production companies. Due to the limited data, many companies or hotels in the tourism sector are recommended to be visited and discussed. In addition, it may be possible to test the model as a whole, with different examples, to be compatible with other models. In addition, future researchers may prefer a different prediction model such as linear, logit, or both. In addition, researchers who want to take the investigation carried out in this article further might consider comparing it with corporate governance, which is part of a company's failure. Apart from the corporate management, it may also be considered for those who want to conduct research in the tourism sector, to analyze according to the tourist regions or to work on the contribution of the tourists to the financial and brand value.

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Wall Street Mojo, Altman Z-Score Formula

APPENDIX

Appendix 1: Questions asked in the meetings of experts, managers and hotel owners

1. Which factors should determine company value in tourism sector and what are the main issues about hotel management sector?
2. What kind of information should you share about financial structure characteristics and periodicity of tourism companies?
3. How the credit demand cycles work in tourism sector and what kind of Financial supports would you need?
4. What should you tell about banks' approach to tourism companies in coast hotel management sector?
5. How do you analyze the tourism sector as financially and operationally?
6. In which terms or seasons would be the best performans for hotels?
7. How do you decide while financing a hotel's need for different terms such as crisis termsi investment terms, regular terms, on season, etc?
8. What are the main reasons of 2016 crisis in tourism sector?

Appendix 2: Altman Z-Score Results and Rankings:

Company/Years	Altman Z-Scores				Altman Z-Score Rankings			
	2016	2017	2018	2019-09	2016	2017	2018	2019-09
Company 1	1,31	1,57	2,09	2,07	5	5	10	11
Company 2	0,05	0,49	1,42	1,83	29	28	22	17
Company 3	0,01	0,92	2,12	2,08	30	15	9	9
Company 4	0,80	1,01	1,49	1,82	12	14	19	19
Company 5	0,22	0,58	1,27	1,69	26	25	26	26
Company 6	0,09	0,88	1,06	1,54	27	18	29	29
Company 7	0,84	1,06	2,02	1,82	11	13	12	18
Company 8	1,95	2,38	3,38	3,38	2	1	1	2
Company 9	1,16	1,78	2,06	3,09	8	3	11	3
Company 10	1,23	1,49	1,72	1,86	7	6	14	15
Company 11	1,52	1,40	1,41	1,81	3	8	23	22
Company 12	0,78	0,64	1,16	1,80	14	23	28	24
Company 13	0,58	0,56	2,18	2,16	16	27	6	8
Company 14	0,68	1,11	2,25	2,19	15	12	5	7
Company 15	0,80	0,86	1,71	2,01	13	19	15	13
Company 16	0,42	0,75	2,14	2,86	21	21	7	4
Company 17	0,07	0,46	0,99	1,47	28	29	30	30
Company 18	1,29	1,46	2,66	2,49	6	7	3	5
Company 19	0,23	0,61	1,33	1,81	25	24	25	21
Company 20	0,52	1,15	1,56	1,96	20	10	17	14
Company 21	0,55	0,89	1,45	1,83	17	17	20	16
Company 22	0,29	0,45	1,63	1,80	24	30	16	25
Company 23	0,55	0,79	1,45	1,80	18	20	21	23
Company 24	0,85	1,13	2,56	2,36	10	11	4	6
Company 25	0,53	0,90	1,51	1,82	19	16	18	20
Company 26	0,40	0,56	1,40	1,67	23	26	24	27
Company 27	0,40	0,70	1,26	1,59	22	22	27	28
Company 28	2,04	2,22	3,16	3,44	1	2	2	1
Company 29	1,47	1,62	1,89	2,08	4	4	13	10
Company 30	0,90	1,37	2,12	2,05	9	9	8	12

Appendix 3: The data is used in correlation study

[illegible]

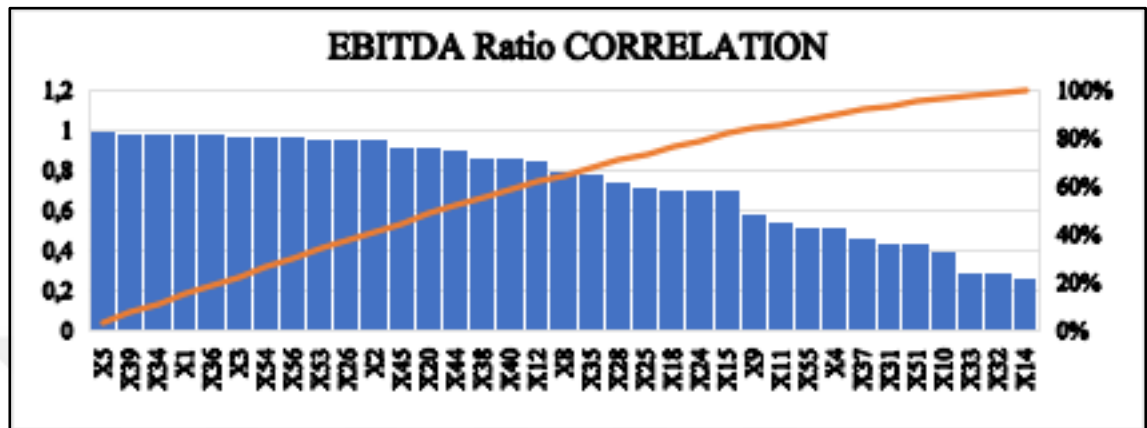
Appendix 3: The correlation matrix

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																				

Appendix 3: The correlation matrix results and percentage effect of ratios on EBITDA

Variable	Details		
X5	EBITDA Ratio	X5=1	Percentage Effect
X1	EUR vs TL (Year-End) 1 EUR equivalence	0,98657513	7,67%
X2	EUR vs TL (Average) 1 EUR equivalence	0,95874122	7,45%
X3	Occupancy Ratio	0,97813068	7,60%
X4	Inflation Rate	0,51624433	4,01%
X6	Net Financial Debt/EBITDA	-0,9883007	-7,68%
X7	❖ Total Equity/Total Assets	-0,2615994	-2,03%
X8	❖ Total Equity/Total Liabilities	0,8023113	6,24%
X9	❖ Tangible Fixed Assets(Net)/Total Equity	0,58098492	4,52%
X10	❖ Tangible Fixed Assets(Net)/Total Long Term Liabilities	0,39916389	3,10%
X11	❖ Total Non-Current Assets/Total Equity	0,55313263	4,30%
X12	❖ Total Current Assets/Total Assets	0,85870687	6,67%
X13	❖ Total Non-Current Assets/Total Assets	-0,8587069	-6,67%
X14	❖ Leverage Ratio = Total Long Term and Short Term Liabilities/ Total Assets	0,26159942	2,03%
X15	❖ Short Term Liabilities/ Total Sources (Assets)	0,70305173	5,46%
X16	❖ Long Term Liabilities/ Total Sources (Assets)	-0,7911356	-6,15%
X17	❖ Long Term Liabilities/ (Continuous Capital = Long Term Liabilities + Equity)	-0,1666785	-1,30%
X18	❖ Total Non-Current Assets / Total Long Term and Short Term Liabilities	0,70873898	5,51%
X19	❖ Total Non-Current Assets / (Continuous Capital = Long Term Liabilities + Equity)	-0,362074	-2,81%
X20	❖ Short Term Liabilities/ Total Long Term and Short Term Liabilities	0,91758638	7,13%
X21	❖ Bank Loans (Including Interests) / Total Assets	-0,3777569	-2,94%
X22	❖ Short Term Bank Loans + Current Maturities of Long Term Credits and Accrued Interest/ Short Term Liabilities	-0,6969959	-5,42%
X23	❖ Bank Loans (Including Interests) / Total Long Term and Short Term Liabilities	-0,9489062	-7,37%
X24	❖ Current Ratio (Current Assets / Short Term Liabilities)	0,70823219	5,50%
X25	❖ Acid-Test Rate ((Current Assets - (Inventories + Prepaid Expenses for Future Months + Other Current Assets)) / Short Term Liabilities)	0,71654945	5,57%
X26	❖ Cash Ratio (Cash&Cash Equivalents / Short Term Liabilities)	0,96552683	7,50%
X27	❖ Inventories / Current Assets	-0,5346534	-4,16%
X28	❖ Inventories / Total Assets	0,75090567	5,84%
X29	❖ Stock Dependency Ratio (Short Term Liabilities- (Cash & Cash Equivalents + Marketable Securities)) / Inventories	-0,9269856	-7,20%
X30	❖ Short Term Receivables (Trade and Other)/ Current Assets	-0,098435	-0,77%
X31	❖ Short Term Receivables (Trade and Other)/ Total Assets	0,43754329	3,40%
X32	❖ Net Profit After Tax/ Total Equity	0,29262555	2,27%
X33	❖ Profit Before Tax / Total Equity	0,29603682	2,30%
X34	❖ Economic Profitability ((Financial Expense + Profit Before Tax) / Total Sources)	0,98660647	7,67%
X35	❖ Net Profit After Tax/ Total Assets	0,785059	6,10%
X36	❖ Operating Profit / (Total Assets - Financial Fixed Asset)	0,98512482	7,66%
X37	❖ Cumulative Profitability Rate (Total Undistributed Profits + Reserves / Total Assets)	0,46565654	3,62%
X38	❖ Operating Profit / Net Sales	0,86875833	6,75%
X39	❖ Gross Sales Profit / Net Sales	0,98843676	7,68%
X40	❖ Net Profit After Tax / Net Sales	0,8681628	6,75%
X41	❖ Cost of Sales / Net Sales	-0,9938	-7,72%
X42	❖ Operating Expenses/ Net Sales	-0,8625267	-6,70%
X43	❖ Financial Expenses / Net Sales	-0,8688999	-6,75%
X44	❖ Net Profit Before Tax + Financing Expenses / Financing Expenses	0,90042467	7,00%
X45	❖ Net Profit After Tax+ Financial Expenses / Financial Expenses	0,91821225	7,14%
X46	❖ Net Profit Margin Growth	-0,2906946	-2,26%
X47	❖ Net Sales Growth	-0,1893305	-1,47%
X48	❖ Total Equity Growth	-0,4609691	-3,58%
X49	❖ Total Assets Growth	-0,4096844	-3,18%
X50	❖ Receivable Turnover Rate (Net Sales / Total Trade Receivables)	-0,1255473	-0,98%
X51	❖ Working Capital Turnover Rate (Net Sales / Current Assets)	0,43407565	3,37%
X52	❖ Net Working Capital Turnover Rate (Net Sales / (Current Assets- Short Term Liabilities)	-0,9498562	-7,38%
X53	❖ Tangible Fixed Assets Turnover Rate (Net Sales / Net Tangible Fixed Assets)	0,96644194	7,51%
X54	❖ Non-current Assets Turnover Rate (Net Sales / Total Non-Current Assets)	0,97811146	7,60%
X55	❖ Equity Turnover Rate (Net Sales / Total Equity)	0,51785559	4,02%
X56	❖ Assets Turnover Rate (Net Sales / Total Assets)	0,97496879	7,58%
	Total	12,8667455	100,00%

Appendix 4: The correlation matrix results and percentage effect of ratios on EBITDA as graph



Appendix 4: The correlation study results and rankings

Companies	Terms	Correlation Results Points/Trends for Ranking	Correlation Results Ranking 2016	Correlation Results Ranking 2017	Correlation Results Ranking 2018	Correlation Results Ranking 2019/09	Realized EBITDA	Realized EBITDA ranking 2016	Realized EBITDA ranking 2017	Realized EBITDA ranking 2018	Realized EBITDA ranking 2019/09
Company 1	2016	58%	18				8%	21			
	2017	198%		7			25%		15		
	2018	31%			19		40%			17	
	2019-09	237%				16					16
Company 2	2016	162%	9				13%	15			
	2017	-66%		26			33%		9		
	2018	-16%			22		43%			14	
	2019-09	-2%				19	28%				26
Company 3	2016	-131%	27				45%	30			
	2017	55%		12			51%		1		
	2018	39%			18		58%			1	
	2019-09	361%				9	50%				4
Company 4	2016	37%	20				7%	23			
	2017	-113%		27			28%		11		
	2018	296%			7		43%			13	
	2019-09	24%				17	37%				18
Company 5	2016	-129%	26				-11%	28			
	2017	42%		19			27%		12		
	2018	-110%			26		20%			29	
	2019-09	-391%				25	25%				28
Company 6	2016	210%	4				-2%	26			
	2017	-271%		29			12%		30		
	2018	-111%			27		22%			27	
	2019-09	-370%				24	17%				30
Company 7	2016	142%	11				7%	22			
	2017	423%		3			21%		21		
	2018	-231%			30		44%			12	
	2019-09	276%				14	41%				13
Company 8	2016	204%	5				23%	4			
	2017	51%		14			19%		25		
	2018	197%			9		31%			23	
	2019-09	592%				4	33%				23
Company 9	2016	137%	12				16%	11			
	2017	10%		22			23%		17		
	2018	56%			17		10%			30	
	2019-09	681%				1	51%				3
Company 10	2016	114%	15				14%	14			
	2017	264%		6			19%		26		
	2018	-41%			24		25%			25	
	2019-09	274%				15	30%				24
Company 11	2016	250%	3				26%	2			
	2017	42%		18			33%		7		
	2018	-26%			23		38%			19	
	2019-09	300%				11	35%				21
Company 12	2016	20%	21				31%	1			
	2017	47%		17			41%		2		
	2018	-116%			28		52%			4	
	2019-09	5%				18	49%				6
Company 13	2016	136%	13				13%	17			
	2017	48%		16			18%		27		
	2018	342%			4		50%			6	
	2019-09	412%				8	39%				15
Company 14	2016	155%	10				13%	16			
	2017	-475%		30			21%		23		
	2018	466%			1		40%			16	
	2019-09	608%				3	42%				11
Company 15	2016	201%	6				18%	9			
	2017	54%		13			22%		19		
	2018	63%			16		44%			11	
	2019-09	356%				10	47%				8
Company 16	2016	171%	8				22%	5			
	2017	57%		11			38%		3		
	2018	120%			13		57%			2	
	2019-09	653%				2	56%				1
Company 17	2016	1539%	1				-36%	29			
	2017	16%		21			21%		22		
	2018	9%			20		42%			15	
	2019-09	-420%				27	46%				10
Company 18	2016	-1305%	30				22%	7			
	2017	176%		8			34%		5		
	2018	367%			3		54%			3	
	2019-09	540%				5	53%				2
Company 19	2016	-44%	25				-10%	27			
	2017	510%		2			17%		28		
	2018	145%			12		29%			24	
	2019-09	-133%				21	26%				27
Company 20	2016	187%	7				14%	12			
	2017	-208%		28			26%		13		
	2018	-52%			25		32%			22	
	2019-09	300%				12	29%				25
Company 21	2016	59%	17				26%	3			
	2017	19%		20			29%		10		
	2018	420%			2		49%			8	
	2019-09	-367%				23	46%				9
Company 22	2016	-139%	28				6%	24			
	2017	-47%		25			22%		18		
	2018	172%			10		33%			21	
	2019-09	-452%				28	35%				22
Company 23	2016	5%	24				14%	13			
	2017	-4%		24			33%		6		
	2018	329%			5		48%			9	
	2019-09	-116%				20	41%				12
Company 24	2016	19%	22				2%	25			
	2017	74%		10			14%		29		
	2018	232%			8		38%			18	
	2019-09	-686%				30	36%				20
Company 25	2016	15%	23				12%	19			
	2017	6%		23			33%		8		
	2018	313%			6		47%			10	
	2019-09	-135%				22	40%				14
Company 26	2016	117%	14				12%	18			
	2017	48%		15			26%		14		
	2018	100%			14		50%			7	
	2019-09	-419%				26	49%				5
Company 27	2016	862%	2				12%	20			
	2017	327%		5			24%		16		
	2018	159%			11		37%			20	
	2019-09	-458%				29	36%				19
Company 28	2016	-158%	29				22%	6			
	2017	105%		9			20%		24		
	2018	88%			15		25%			26	
	2019-09	538%				6	37%				17
Company 29	2016	67%	16				17%	10			
	2017	1276%		1			21%		20		
	2018	-14%			21		21%			28	
	2019-09	284%				13	23%				29
Company 30	2016	41%	19				21%	8			
	2017	386%		4			37%		4		
	2018	-185%			29		52%			5	
	2019-09	508%				7	49%				7

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Publications (if any) : -

Work Experience:

Position	Company	Years
Credit Department/Underwriting	YKB	2012-...