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Projections of tourist arrivals in the Eastern Black Sea Region of Turkey

Türkiye'nin Doğu Karadeniz Bölgesine Gelen Turistlerin Projeksiyonları

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Abstract

Tourism forecasting plays a vital role in developing a firm policy for the management of future development in the sector. This study makes tourist arrival projections in the Eastern Black Sea Region of Turkey with the application of Autoregressive Integrated Moving Average (ARIMA) model. Monthly data of tourist arrivals from 2008 to 2018 have been used for the proposed model. The results have revealed that the proposed model has projected the tourist arrival values that are near to actual tourist arrivals. Tourist arrivals are expected to be increased in the future years in Eastern Black Sea Region, hence, making the region a popular tourist destination. Therefore, prior measures are essential to take to develop tourism in a sustainable form. The results of the study are useful for the development of better tourism policy for the region as future projection is an integral part of sustainable tourism development.

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Öz

Turizm öngörüleri, sektörün gelecekteki gelişmelerinin yönetimi için sağlam bir politika geliştirmede çok önemli rol oynamaktadır. Bu çalışma, Türkiye'nin Doğu Karadeniz Bölgesi'nde Otoregresif Entegre Hareketli Ortalama (ARIMA) modelinin uygulanması ile gelen turist sayısının projeksiyonunu sunmaktadır. Önerilen model için 2008'den 2018'e kadar gelen turist sayılarının aylık verileri kullanılmıştır. Sonuçlar, önerilen modelin gerçek gelen turist sayılarına çok yakın değerleri öngördüğünü ortaya koymuştur. Doğu Karadeniz Bölgesi'nde gelecek yıllarda gelen turistlerin artması ve bölgenin popüler bir turizm merkezi haline gelmesi beklenmektedir. Bu nedenle, turizmi sürdürülebilir bir biçimde geliştirmek için önceden bazı önlemlerin alınması gerekmektedir. Gelecek projeksiyonu, sürdürülebilir turizm gelişiminin ayrılmaz bir parçası olduğundan çalışmanın sonuçları bölge için daha iyi bir turizm politikasının geliştirilmesine katkıda bulunacaktır.

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1. Introduction

The tourism industry has proven to be a significant economic sector in recent decades, and many developing countries have prioritized tourism in their national economic policies (Barbosa, Jayme and Missio 2018; Giap, Gopalan and Ye 2016). According to recent statistics, tourist arrivals worldwide have shown a significant increase of 5%. In comparison, global tourism exports increased by 4 %, reaching 1.4 billion number and 1.7 trillion USD, respectively, in the year 2018 as compared to previous years (UNWTO, 2019). Tourism is considered a useful tool to exploit the natural and cultural assets of a region for the sake of economic gains. The emergence of new tourist destinations provides excellent opportunities for the local communities to diversify their economic activities and the creation of new jobs (Seckelmann, 2002). The developing countries of the world make hard endeavors to attract inbound tourists as a source of significant foreign exchange products (Giap, Gopalan and Ye, 2016; Lee, Var and Blaine, 1996; Tavares and Leitao, 2017). Therefore, investments are made to develop new destinations with the provision of incentive packages in different regions of the world.

Although tourism brings economic prosperity to the host communities, the negative consequences remain big trouble. The growing numbers of tourists put enormous pressure on the natural and cultural environment of the destination area. Therefore, various socioeconomic and environmental changes associated with tourism growth must be addressed adequately to minimize the harmful effects of tourism (Juvan and Dolnicar, 2014; Marrocu and Paci, 2013; United Nations, 2005). If the economic development is continued staking natural and social stability, the outcomes may lead to irreversible damages to the natural environmental settings of the destination, which in turn brings severe economic losses by the time. Hence, a balancing approach to tackle down development vs. environment nexus must be adopted to optimize the benefits of tourism growth in any region (Bramwell et al. 2017; Lu, 2009; Ruhanen, Weiler and Moyle, 2015). From these perspectives emerges the notion of sustainable tourism development that has been widely recognized in academics and policymakers related to the tourism industry.

Turkey is one of the popular tourist destinations ranking 6th in the world, with a growing number of inbound and local tourist arrivals every year (UNWTO, 2019). Turkey's sustainable development policy remained vague for many years as economic development was considered first and foremost target of the country's economic policy, putting a question mark on environment protection (Sönmez, 1998; Tosun, 2001; Tosun, Timothy and Öztürk, 2003). The tourism sector of the country also depicted the implication of a similar policy under which incentives were provided to open tourist enterprises without any cautious approach towards the environment (TÜSİAD, 2012). Turkey's most famous tourist destinations are located on the beach areas of southwestern provinces that have overcrowded with the time, affecting the environment negatively. The government has taken specific measures to reduce the risks of unplanned growth of tourism in southwestern regions by applying sustainable tourism policy in the form of the National Environment Action Plan (NEAP) (United Nations, 2005). The dispersal of tourists towards other areas is also part of the policy to reduce the pressure on the old tourist destination. The black sea region of Turkey with varying topography and cultural richness provides a very suitable option to develop tourism out of the crowded areas.

Tourism development in Turkey has seen as an essential source of exchange earnings as well as a vital tool for generating new income opportunities. Many tourist destinations in the country have been opened as part of the government's incentive policy to promote mass tourism in the country since the 1980s. However, the development-first goal has ignored the environmental consequences of tourism development in many areas resulting in increased pollution, traffic congestion, overcrowded lodgings, and sociocultural problems. The famous tourist destinations of the country are located in the southwestern regions adjacent to Mediterranean and Aegean seas that are popular for beach tourism and attract millions of inbound and local tourists each year. The random growth of tourist enterprises and small-scale operators has put pressure on the natural environment to a large extent. Moreover, new destinations in other regions of the country are also emerging as a policy part of reducing the growing pressure on already crowded tourist areas. The forecasting of tourism growth is crucial to make adequate planning and management of tourist arrivals in the future.

In recent years, the black sea region of Turkey has observed significant growth in tourist arrivals that shows the successful implication of national tourism strategy. However, the disparities between inbound and local tourist arrival are still visible while looking at the statistics. The present study aims to analyze tourism growth in the black sea region of Turkey and to make future projections of inbound and local tourist arrival in the area by application of Autoregressive Integrated Moving Averages (ARIMA) model. The ARIMA model is considered a useful tool to predict and forecast any variable of interest based on previous observations. The findings of the study are expected to help to understand the growth of tourism in the region that further is necessary for sustainable tourism policy formulation. The highlighted notion of sustainable tourism development in the study will contribute to developing resource-efficient policy by considering the social, economic, and environmental settings of the region.

2. Literature Review

The idea of sustainable tourism lies within the framework of sustainable development, which is based on environmental preservation and equity for the sustainable future of the world (Budeanu et al. 2016; Bunakov et al. 2015; Jamal and Camargo, 2014; Moscardo, 2015). Tourism is one of the important economic sectors which is directly associated with people and the natural environment and hence, requires immediate application of sustainable development principles. The development of sustainable tourist aims to raise the economic standards of the host community while maintaining the natural ecosystems by taking measures to reduce human impact on the environment (Andrades-Caldito and Sánchez-Rivero, 2015; Cheng and Wu, 2014; Pulido-Fernández). Economic, social, and environmental aspects, also known as three pillars of sustainability, are considered of equal importance, without any tradeoff between them, to promote sustainable tourism in certain region. Tourism can help reduce poverty, generate income opportunities and improve living status of the local residents of the destination area, if managed according to the principles of sustainable development (Amir et al. 2015; Bunakov et al. 2015).

Tourism literature is very diverse due to the very large extent of the sector, including multidimensional socioeconomic, political, environmental, and organizational processes. The introduction of sustainable tourism has shifted the attention of academia towards analyzing

environmental aspects of tourism development since the 1990s (Hill and Gale, 2009; Juvan and Dolnicar, 2016; Yang et al. 2013). Many empirical studies have reached the conclusions about problems, shortcomings, and deficiencies of adequate policies to deal with the issue of sustainability while developing tourism in various popular destinations of the world (Gozgor, Demir and Bilgin, 2017; Gupta and Vegelin, 2016; Jamal and Camargo, 2014). Moreover, the tourism studies have taken into consideration the varying dimensions of tourism ranging from theoretical foundations and concepts (Farmaki et al. 2015) to policy formulation and impact assessment (Hall, 2011; Kang, Kim and Nicholls, 2014), and more recently to behavioral and consumption changes related to technological innovations (Hall, 2011). Besides, tourism led growth hypothesis, and factors hindering tourism development like political instability and terrorism have also been mainly discussed. Although some essential areas of research like tourism forecasting based on region-specific approaches still need to be addressed with new innovative techniques.

Forecasting the tourism arrivals is seen as key for the planning and policy formulation in the future as it provides more significant insights into the needs and requirements for the tourism development (Makoni and Chikobvu, 2018; Naderan and Shahi, 2010; Petrevska, 2017). Tourist organizations and government sectors take much advantage from the findings of such kinds of studies. Many new techniques have been developed and tested to predict the future trends of tourist arrivals based on previous trends or exogenous factors as dependent variables like statistical and econometric modeling and neural networks. Baldigara and Mamula (2015) have used the Seasonal ARIMA model to predict the tourist arrivals from Germany in Croatia and found that the forecasting is very close to the actual values of tourist arrivals, hence proving the validity of the proposed method. Gozlu and Koyuncu (2016) have used correlation and regressions analysis to find out the future trends of health tourism in Turkey. They concluded that health care tourism showed a consistent upward trend just like the aggregate of tourism income in Turkey. Yilmaz (2015) has also used the Seasonal ARIMA model to depict the future projections of tourism in Turkey. The conclusions of study proved the accuracy of selected model in prediction of tourist arrival as pioneer study in Turkey.

Cankurt and Subasi (2015) have proposed machine learning techniques to assess the future forecasts of tourist arrival in Turkey. They have used multilayer perception and support vector regression model to test the forecasting efficiency of such technological advanced models. Their study concluded the high efficiency of the proposed method in tourism prediction studies. An empirical research conducted by (TUNG, 2019) using the ARIMA model for the prediction of tourism in Vietnam highlights the deficiency in reality and forecasting of future regarding tourism development. The study concluded the usefulness of the ARIMA model in the projection of tourism trends accurately. Chhorn and Chaiboonsri (2018) have used a hybrid ARIMA GARCH model to analyze the future values of tourist arrivals in Cambodia. They have suggested understanding the volatilities in tourist arrivals for adequate policy formation.

The current literature has shed light on the significance of tourists' forecasting along with the application and usefulness of the ARIMA model to predict future trends precisely. However, the analysis of literature has also revealed a shortage of such empirical studies in area-specific cases like Turkey.

Although a handful amount of empirical studies has been conducted to use forecasting techniques in tourism in Turkey (Yilmaz, 2015), there is still a large room for conducting novel research in many newly emerging tourist destinations. The present study presents such an effort to project the tourist arrivals in the Black Sea Region of Turkey, which has gained much attention as an alternative destination for mass tourism in Turkey. The findings of the study will provide a detailed insight into the trends and patterns of tourism development in the region.

3. Material and Methods

3.1 Study Area

The Eastern Black Sea Region is located in the northeastern part of Turkey, which is a subdivision of the larger Black Sea Region. The extent of the area comprises 36,837 km² that makes 4.7% of the total landmass of the country. The region is subdivided administratively into seven provinces named Ordu, Giresun, Trabzon, Rize Artvin, Gumushane, and Bayburt. The area is embellished with varying topography, extended beaches, mountain peaks, and pleasurable weather. All these characteristics make the region a potential destination for mass tourism, nature tourism, ecotourism, and health tourism. There is an emerging trend for local tourists from all over Turkey to spend holidays in this region, especially in summer months.

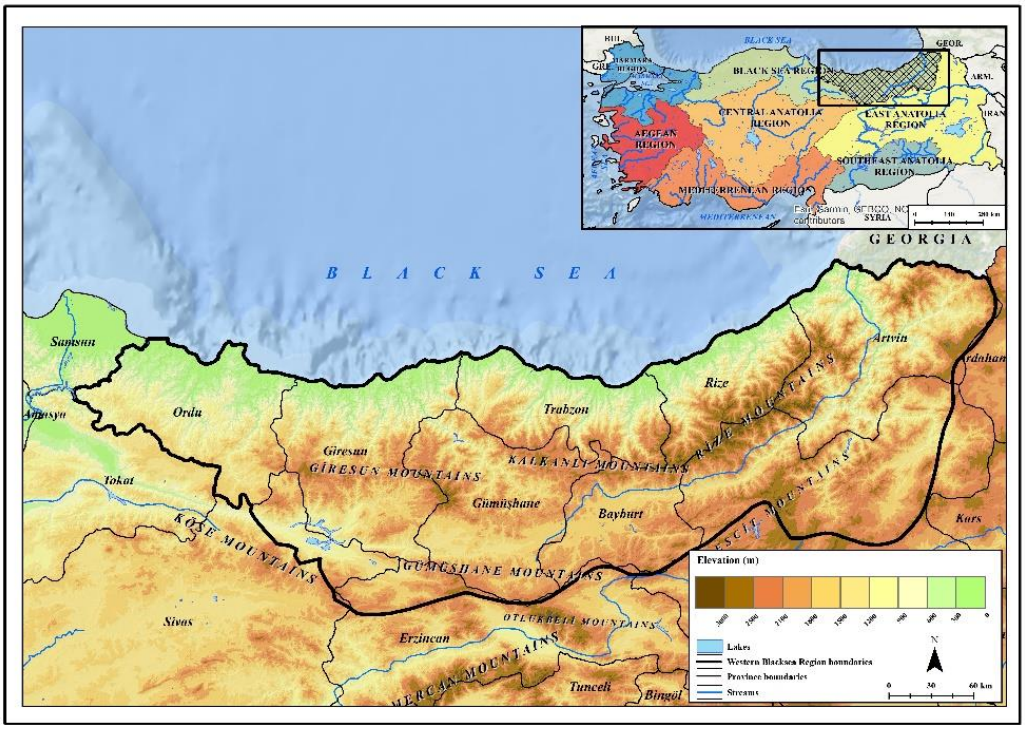


Figure 1. Location map of the Eastern Black Sea Region

The eastern Black Sea Region of Turkey has gained much attention from local tourists within the last decades, and many people decide to spend their holidays in the lush green mountain areas near to the extensive beaches of the region. The Black Sea Region of Turkey comprises of seven provinces, out of which five provinces border the sea while two are inland provinces (Figure 1). The region is a popular destination due to its varying topography, including high peaks, vibrant vegetation cover, and

extended beaches that provide opportunities for different types of tourism, including ecotourism, nature tourism, and health tourism. The statistics of tourist arrivals have revealed that inland provinces of Gumuşhane and Bayburt received a smaller number of tourists. In contrast, Trabzon province receives plenty of local and foreign tourists (Figure 2). The reasons behind these differences in tourism development within the region include location, transport and infrastructure facilities, and availability of seaport.

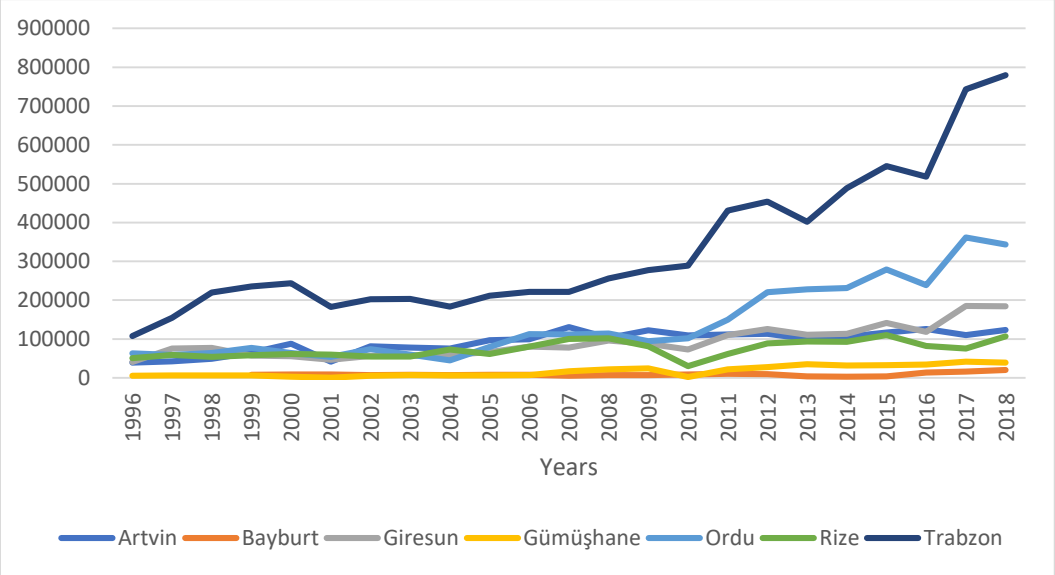


Figure 2. Tourist arrivals in provinces of Eastern Black Sea Region
Source: Ministry of Tourism Turkey, 2019

The figure also reveals an increasing trend in tourism in the provinces of Black Sea Region. However, a significant growth in number of tourist arrival is found in the provinces that are located near the beach or having more potential for nature-based tourism like Giresun. The Giresun province has turned into a famous destination of mountain tourism with many places of pasture settlements like Kümbet Yaylası. The Turkish government has made policies to expand tourism in other suitable regions, which will help reduce the pressure on old destinations and diversify economic development.

The Eastern Black Sea Region has various natural and cultural attractions. Many sites with vibrant flora and fauna of the region have been declared as natural sites under the category of protected areas that promote ecotourism. The protected areas of the region are aimed to preserve the natural ecosystem along with the increasing economic opportunities for the local communities under the principle of sustainable development. A large number of local and foreign tourists visit these sites, which in turn contribute in the economics of the region significantly. There are 202 sites in the region that have status of natural sites, national parks, or nature parks (Table 1). Out of these sites, 102 (more than 50%) are located in the Samsun province, followed by Ordu, Gümüşhane, and Trabzon with a number of 35, 21, and 18, respectively. Provinces of Giresun, Rize, and Artvin have the least amount of natural, historical and archaeological sites.

Table 1. The number of natural sites in the Eastern Black Sea Region of Turkey

Province	Archaeological Sites	Urban Sites	Historical Areas	Urban Archaeological Sites	Natural Sites	Total
Artvin	3		3	1		7
Giresun	5		1		3	9
Gümüşhane	20				1	21
Ordu	26	2		1	6	35
Rize	4	1	2		1	8
Samsun	95	5			4	104
Trabzon	4	8	3		3	18
Eastern Black Sea Region	157	16	9	2	18	202

Source: Doğa Koruma ve Milli Parklar Genel Müdürlüğü, 2019

The Ministry of Culture and Tourism has developed 38 tourism centers in the region and 4 culture and tourism protection and development regions to promote sustainable tourism in the region. There are 495 tourism facilities in the region with 12067 rooms and 24,878 bed capacity. However, these facilities are not considered enough to meet the needs of the growing number of tourist arrivals each year. The tourism sector in the region shows high seasonality as most of the people prefers to visit the areas in the summer months. The emergence of winter tourist destinations has attracted some tourists in the winter season too.

3.2 The ARIMA Model

Box and Jenkins (1976) have developed the Autoregressive Integrated Moving Average model, commonly known as the ARIMA model, which has been proven useful for the prediction of any variable of interest in the future. The generalized form of the ARIMA (pdq) model consists of a combination of Autoregressive (AR) and Moving Average (MA) models. The terms p and q denote the number of lagged values for a variable of interest and number of lag values for error term, respectively. At the same time, d represents the number of times of difference to make the data stationary. Hence, the ARIMA model for the present study can be written as:

$$Tur_t = c + \partial_1 Tur_{t-1} + \cdots + \partial_p Tur_{t-p} + \delta_1 \epsilon_{t-1} + \cdots + \delta_q \epsilon_{t-q} + \epsilon_t \quad (1)$$

Here, Tur_t represents the differenced series of tourist arrivals, while ∂ describes the autoregressive component of the model and δ depicts the parameter component of moving average component. Equation 1 can be written in backshift notation as:

$$\left(1 - \partial_1 \mathrm{B} - \cdots - \partial_p \mathrm{B}^p\right)(1 - \mathrm{B})^d Tur_t = c + \left(1 + \delta_1 \mathrm{B} + \cdots \delta_q \mathrm{B}^q\right)\epsilon_t \quad (2)$$

4. Findings

The non-stationarity properties of the tourist arrivals in the Black Sea Region of Turkey are shown in the (Figure 3), which means there is an upward trend in the values. An upward trend in a time series depicts the changes in the mean and variance of data over time. The Augmented Dicky Fuller (ADF) test is conducted to test the stationarity of the variable, and results are shown in Table 2. The variable is found stationary at first difference. Hence, the ARIMA (p,1, q) model will be used for the projections of tourist arrivals in the region in the future. The monthly data of 12 years for a period

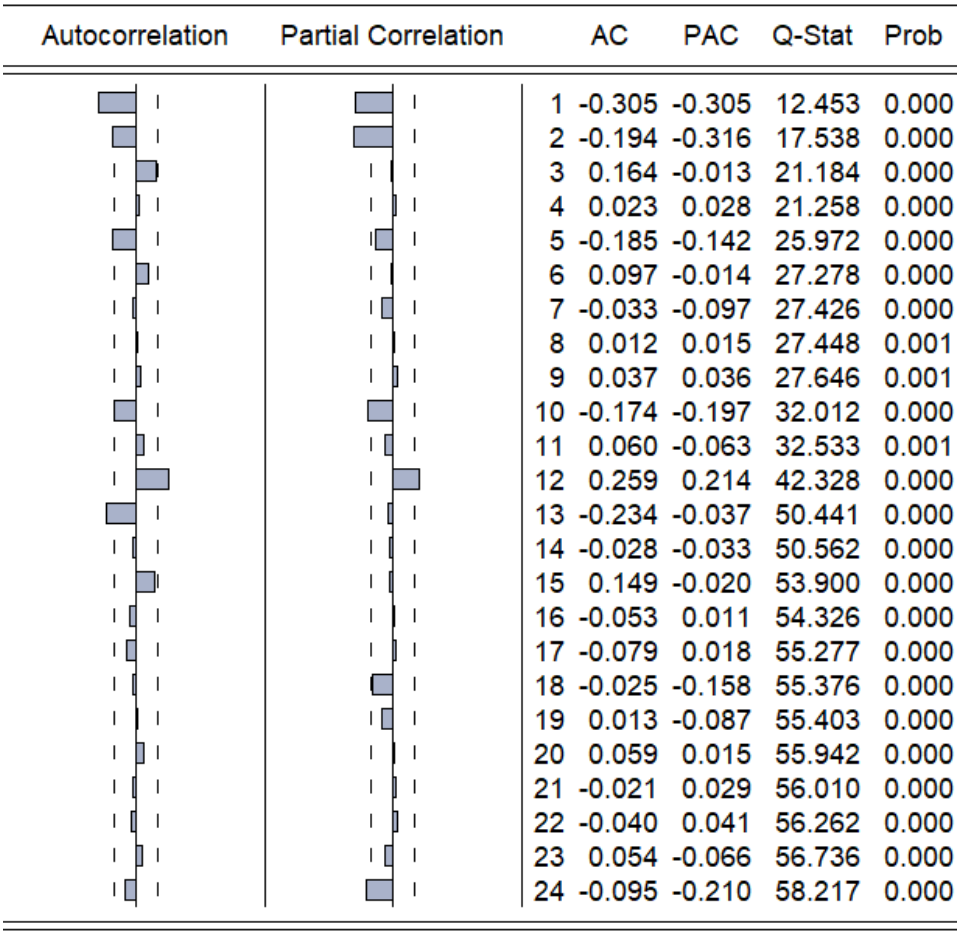
between 2008-2018 is collected from the Ministry of Tourism and Culture Turkey for the current analysis.

Table 2. Augmented Dicky Fuller (ADF) test results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D (TOURISTS (-1))	-1.750573	0.139132	-12.58208	0.0000
D (TOURISTS (-1),2)	0.337105	0.086214	3.910116	0.0001
C	328.0358	2256.065	0.145402	0.8846
R-squared	0.689684	Mean dependent var		-167.7562
Adjusted R-squared	0.684758	S.D. dependent var		45619.03
S.E. of regression	25613.43	Akaike info criterion		23.16260
Sum squared resid	8.27E+10	Schwarz criterion		23.22911
Log likelihood	-1490.988	Hannan-Quinn criter.		23.18963
F-statistic	140.0189	Durbin-Watson stat		1.995582
Prob(F-statistic)	0.000000			

The autocorrelation (ACF) and partial autocorrelation (PACF) movements in the correlogram are helpful in determining the suitable ARIMA model for the prediction of tourist arrivals in the study area. The correlogram presented in Figure (2) has shown various lengths of lags with significant non-zero values of autocorrelation (AC) and partial autocorrelation (PAC) coefficients values. Therefore, the best possible ARIMA models for forecasting the tourist arrivals can be ARIMA (1,1,1), (1,1,12), (12,1,1) and (12,1,12). The diagnostic tests for each of the selected models would be done and compare to select the best model for analysis. The results of diagnostic tests are given in Table 2.

The results of diagnostic tests (Table 3) are helpful in finding the most appropriate ARIMA model for further analysis based on specific criteria. The selection criteria consist of the highest significant coefficients, lowest volatility ($Sigma^2$), highest adjusted $R^{2,}$ and lowest AIC and SBIC values. The ARIMA model (1,1,12) is selected on the bases above-mentioned criteria and further confirmed by the diagnostic test to check the reliability of the model, and results are given in the correlogram shown in Figure 3.



	AC	PAC	Q-Stat	Prob
1	-0.305	-0.305	12.453	0.000
2	-0.194	-0.316	17.538	0.000
3	0.164	-0.013	21.184	0.000
4	0.023	0.028	21.258	0.000
5	-0.185	-0.142	25.972	0.000
6	0.097	-0.014	27.278	0.000
7	-0.033	-0.097	27.426	0.000
8	0.012	0.015	27.448	0.001
9	0.037	0.036	27.646	0.001
10	-0.174	-0.197	32.012	0.000
11	0.060	-0.063	32.533	0.001
12	0.259	0.214	42.328	0.000
13	-0.234	-0.037	50.441	0.000
14	-0.028	-0.033	50.562	0.000
15	0.149	-0.020	53.900	0.000
16	-0.053	0.011	54.326	0.000
17	-0.079	0.018	55.277	0.000
18	-0.025	-0.158	55.376	0.000
19	0.013	-0.087	55.403	0.000
20	0.059	0.015	55.942	0.000
21	-0.021	0.029	56.010	0.000
22	-0.040	0.041	56.262	0.000
23	0.054	-0.066	56.736	0.000
24	-0.095	-0.210	58.217	0.000

Figure 3. The correlogram of tourist arrivals showing ACF and PACF values

The results of diagnostic tests reveal that the ARIMA (1,1,12) model is the best suitable model for prediction of tourists' arrivals in the study area with 95% confidence based on the probability values.

Table 3. Comparison of results of different models for the selection of most appropriate model

	ARIMA 1,1,1	ARIMA 1,1,12	ARIMA 12,1,1	ARIMA 12,1,12
Significant Coefficients (AR, MA)	(0.0022, 0.0000)	(0.0000, 0.0000)	(0.0000, 0.0000)	(0.9562,0.1929)
Sigma2 (Volatility)	6.36	5.87	5.89	6.59
Adj. R2	0.166	0.221	0.227	0.136
AIC	23.17	23.10	23.11	23.22
SBIC	23.26	23.20	23.23	23.31

The results of ARIMA (1,1,12) model are given in Table 4. The estimation results of model show that the parameter estimates of variables are significant at the significance level of 0.01 based on the t statistic of the model coefficients and its P value. The selected model has been fitted to the provided tourist data and the result are shown in Figure 4. In the figure, the actual data the fitted values and residual of the model are shown in the graphic format.

Table 4. Estimation results of selected ARIMA model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-35.01152	2700.164	-0.012966	0.9897
AR(1)	-0.322918	0.061433	-5.256421	0.0000
MA(12)	0.515815	0.086844	5.939566	0.0000
SIGMASQ	5.87	43775604	13.41537	0.0000
R-squared	0.247707	Mean dependent var		65.41240
Adjusted R-squared	0.229937	S.D. dependent var		28047.10
S.E. of regression	24612.24	Akaike info criterion		23.11911
Sum squared resid	7.69	Schwarz criterion		23.20690
Log likelihood	-1510.302	Hannan-Quinn criter.		23.15478
F-statistic	13.93909	Durbin-Watson stat		
Prob(F-statistic)	0.000000	2.155937		

The ARIMA model results of tourism prediction are given in figure 4. As previously discussed, the ARIMA (1,1,12) model is found most suitable for accurate forecasting and forecast of tourist arrivals in the study area. Therefore, the projections of tourist arrivals made by the selected ARIMA model can be considered more accurate to anticipate future trends in the Eastern Black Sea Region of Turkey.

The forecasting model has revealed a continuing increasing trend in the future. Therefore, it is found that the region will receive a growing number of tourists in the future that will help the economic sustainability. The findings are parallel to the previous studies conducted to predict the tourist arrivals in Turkey (Chhorn and Chaiboonsri, 2018; TUNG, 2019; Yilmaz, 2015). Tourism-related new jobs will emerge that will assist in poverty reduction initiatives and increased living standards of the local population. However, the management and planning of tourism-related development are much necessary if to achieves the goals of sustainable development. The Black Sea Region possesses precious natural resources in terms of unique plant and animal species, water resources, and natural and cultural monuments. Concrete policy development with proper implementation can help reduce the future negative impacts of tourism in the area.

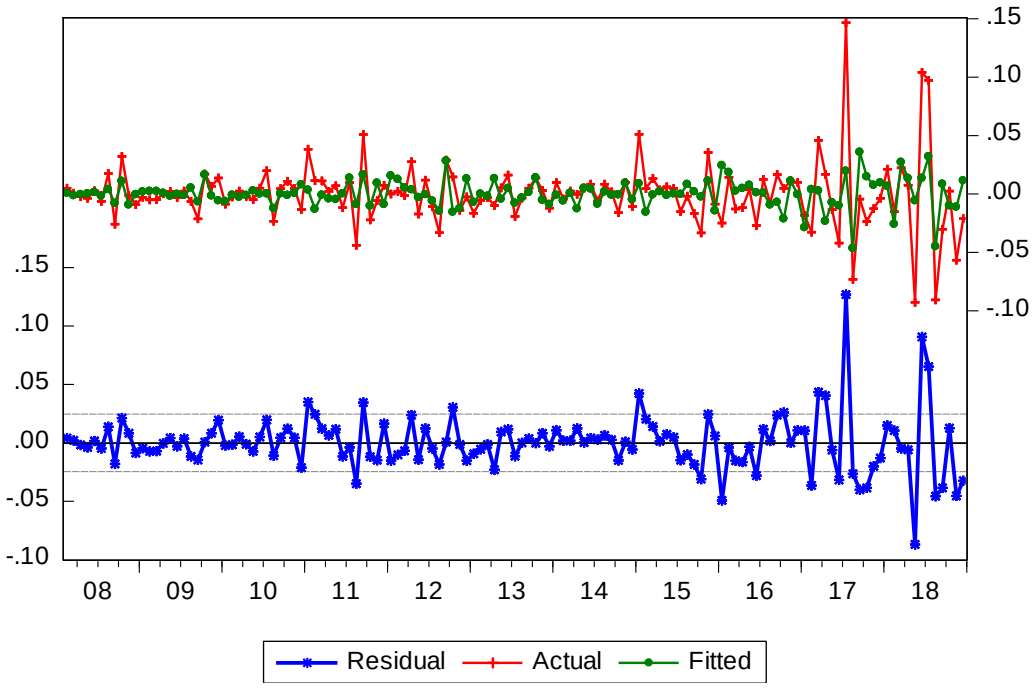


Figure 4. Actual series, fitted series and residual series of the tourist values sequence.

5. Conclusion and Recommendations

The innovative forecasting techniques help predict the future growth of tourism based on the previous trend and make very accurate findings. The present research has used Autoregressive Integrated Moving Average (ARIMA) model to depict the future trend in tourist arrivals in the Black Sea Region of Turkey. It has been found that the region has a variety of natural, cultural, and historical places with great attraction for local and inbound tourists. Hence, a strong potential for the development of different forms of tourism based on various natural and cultural attractions is present in the region. There are many natural sites with vibrant flora and fauna that have been gained the status of protected areas, which further help promote ecotourism activities in the region. The aim of declaring any area as protected is to preserve the natural ecosystem along with the increasing economic opportunities for the local communities under the principle of sustainable development. Therefore, the natural, cultural and historical sites play a vital role in attracting tourists in the region.

The present study has applied the Autoregressive Integrated Moving Average (ARIMA) model on monthly tourist data from 2008 to 2018. The diagnostic test has revealed that ARIMA (1,1,12) model is best fitted for the current analysis. The conclusion has been reached by observing the Autocorrelation and Partial Autocorrelation movements found in the diagnostic test. Results have revealed that the tourism sector will foresee an increasing trend in the region in the future with increased number of both domestic and inbound tourist arrivals. The findings of the present study are parallel to previous studies that have used the ARIMA model to project tourism growth in the other areas of Turkey as well the world (Baldigara and Mamula, 2015; Chhorn and Chaiboonsri, 2018; TUNG, 2019; Yilmaz, 2015) Sustainable tourism development in any region requires evaluation of future trends to take necessary

steps to deal with the harmful effects of tourism growth to the natural environment. Hence, tourism projections are seen as a baseline to develop policies to open new tourist destinations in any region.

Tourism is considered an important economic sector for the development of the eastern black sea region of Turkey as the region is bestowed with a large number of natural, cultural, and historical attractions. In recent years, an increasing trend of local and inbound tourists is observed in the region that is projected to increase in the future. However, the region faces many difficulties and hurdles in the development of tourism in a sustainable manner due to different reasons. The analysis of current situation of accommodation facilities, infrastructure building, and planning regarding tourism development in the region highlights many shortcomings. The number of accommodation facilities in the region as of the year 2018 is only 495 with 12067 rooms and 24,878 bed capacity while the total tourist arrivals in the year 2018 were 50344818. Therefore, the accommodation capacity is far behind the growing number of tourist arrivals in the region. The capacity building in terms of human resources is also not sufficient as foreign tourists are also increasing in the number that requires more trained professionals to deal with.

Most of the tourism sector activities in the region are limited to summer months in the summer pasture destinations. This situation leads to strong seasonality and uncertainty regarding economic opportunities based on tourism. Therefore, policies and planning should be developed to established winter tourism centers to increase the economic benefits throughout the year in a sustainable way. According to the projection of tourist arrival revealed in the present study, it is recommended to build proper infrastructure to tackle the growing number of tourists in the future. Environmental protection should be considered prior to open any area for mass tourism. New lodgings with increased accommodation capacity are required to manage significant tourist arrivals to avoid problems of overcrowding and congestions. A systematic approach should be used to integrate economic, social, and environmental regimes to fulfill the criterion of sustainable tourism development. Besides the policy implications, new research work with different parameters of evaluation are also suggested for better involvement of academia and other stakeholders for better understanding the problems and issues related to tourism development in the region.

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