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Mapping of Airline Destinations According to Share Behavior in Social Media Using Multi-Dimensional Scale

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Abstract

With digital media becoming an important position in mass communication, information is shared and spread to those who use this media. Twitter in digital media is one of the most popular social media platforms that has come up with the combination of social network sites and blogs, with millions of members and the ability to share and spread information quickly. Sharing of information via electronic word of mouth (e-WOM) is one of the important issues that attract the attention of marketers. In this respect, this behavior of social media users is very important in sharing information by favorite or share of any posts on Twitter, as it is displayed by other users on their friends lists. This study aims to find out the location of each destination according to the share and reasons for reccommendation of users by looking at the destinations that are shared by a scheduled Airline operating in Turkey on its official Twitter account in 2016. The study will reveal how city based destinations are in relation to others and the tendency of Turks to other destinations to be seen in concrete terms. By using multidimensional scaling analysis, the locations of destinations according to favorite and share statistics can be displayed in two dimensional space.

Keywords: Social media, Twitter, marketing, online, consumer behavior

1. Introduction

Social media, a reflection of online discourse, is a platform that allows people to create content in a network by tagging each other [1]. In other words, social media; "Social content websites that enable participants to express themselves in online environments, communicate, participate in groups and contribute to ideas, comments and publications in these environments" [11].

The internet, designed by Tom Truscott and Jim Ellis from Duke University in 1979 as a worldwide meeting point [10], has reached a level of interest in almost everybody in 2000 with the emergence of

social media [17]. Today there are 2.789 billion social media users in the world and this number is increasing every year. For example, the number of social media users compared to the previous year showed an increase of 482 million.[2] When we look at these intensive user statistics of social media, it is seen that consumers especially inform each other with online contents about products, brands, people or events [14].

Unlike traditional media channels, social media channels are bringing a new breath to marketing activities in terms of businesses, with the active role

of consumers on these platforms. Especially, the components of the promotion mix that are personal sales, advertising, promotion, public relations and direct marketing offer several advantages in creating different strategies for businesses with the use of social media.

From a sales perspective, the fact that people or groups are more easily convinced by the information they receive from social media about the product or service; when viewed from an advertising standpoint, the fact that the desire and need for the product spread rapidly and become accessible to most users; when viewed from the point of sale promotion, making campaigns for sharing; on the basis of public relations, responding to messages written, solving problems or activating units to solve, and finally establishing new sales channels through social media in terms of direct marketing puts the power on the marketing of online social platforms [11]. In this context, many businesses operate on almost every social media channel, and they inform about their products or services from their social media platforms. In this environment where digital communication of mouth communication is digital, it is very important for informing the product or service to reach everybody in terms of business purposes. Therefore, the popularity of the social media platform, the high number of users and site traffic are important indicators.

According to the research conducted by We Are Social, Facebook is emerging as the most active social media platform in the world today with 1,871 billion users. The research shows that Youtube is the second popular platform with 1 billion users, Instagram with 600 million, Tumblr with 550 million and Twitter with 317 million active users [18].

The aim of this study is to reveal the country and city-based locations of airline destinations that are recommended by airlines in their official twitter accounts in 2016 and to visualize of trends based on Twitter users' reasons for recommendation and sharing numbers. For this purpose, we use Multi-Dimensional Scaling (MDS).

The paper first discusses Twitter, retweet behaviour and the use of social media in Turkey, then the data set and method used in the analysis is illustrated and finally the results outline the findings of this research.

1.1. Twitter and Share Behavior

As a different practice of communication, Twitter is a microblogging service where individuals, groups, or masses chat among themselves with 140-character sentence, and this conversation reaches far more than its counterparts [4]. The core function of this social media platform, which has millions of users worldwide, are associated with RT-retweet, like, share, or comment on messages that people follow through or are not followed by their contacts through.

The most basic feature that distinguishes Twitter from other social media platforms like Facebook and MySpace is that follow-up action is not based on reciprocity. In other words, there is no obligation to follow the follower. This is entirely left to the discretion of the user [13]. The user profile must be publicly accessible or unblocked by the user so that the user can see each other's messages and express their opinions or feelings about these messages.

The basic symbols, letters and expressions used in the posts in Twitter include @, #, ⟲, ♥, ↰, 📷, GIF, ☰, 📍.

Costumers consume social media content, participate in discussions, share information and contribute to the actions of other consumers. These behaviors rapidly change the media and marketing infrastructure and interfere with the marketing of businesses [2, 7]. Because Twitter is a social media platform based on information and sharing, it is very important for companies that use social media actively to know the reasons behind these behaviors.

When looking at the sharing behaviour, it should be known that users are not responsible for all posts they retweet. Nevertheless, it can be considered that retweet behavior has different meanings depending on the social media use intentions of the people. For example; while users who use social media only for daily conversation show less tendency to retweet

behavior, some users retweet posts in order to join a chat or share information on the site. Other possible reasons underlying retweet or sharing behaviour can be specified as [4],

- To make the post more powerful and to reach new viewers,
- Entertaining or informing a specific audience or exhibiting an image,
- To comment or add new content on a post,
- To show that a user is a follower, listener,
- To show people that they have joined in an ideological or ideological sense as a community,
- To approve opinions of others
- Dating, loyalty or interest,
- Raising awareness of less popular people or less visible content,
- To gain mutual followers and
- To keep the tweet to reach again in the future.

2.   Material and Methodology

Multidimensional Scaling (MDS) is a method of visualizing similarities or disparities between object pairs by reducing them to fewer dimensions in multidimensional space, providing measurements at distances between points, [3]. This method which are behavioural characteristics such as personal preferences, attitudes, tendencies, beliefs and expectations [15, 16]. For the use of the MDS, the number of data and variables must be high enough far beyond the manually calculation. Therefore, this analytical technique provides an interdivisional classification, making complex problems more understandable. It also removes the interdependent dependency structure so that the data can be examined at a smaller scale [6].

The relation between the n points and the geometric objects of n objects and the distances between them are calculated and the optimization of adaptation is made in MDS. The process consists of six steps:

Step 1: Data and variables are created by identifying the problem. When preparing the data matrix (Xij), all the data must be prepared on the same scale.

$$x = \begin{bmatrix} x_{11} & x_{12} & x_{13} \\ x_{21} & x_{22} & x_{23} \\ \vdots & \vdots & \vdots \\ x_{p1} & x_{p2} & x_{p3} \end{bmatrix}$$

Step 2: The distance between the points I and j at T-dimensional space is expressed by the following equation [12].

$$d_{ij} = \sqrt{\sum_{a=1}^{t} (x_{ia} - x_{ja})^2}$$

Step 3: The appropriate size of the probing is determined. The stress statistics values are used as reference when the size is determined. The smallest stresss value specifies the size to be used for the solution. Stress values and eligibility criteria are shown below [12].

Stress	Eligibility Criteria
$\geq 0,20$	Incompatible
$0,10 < 0,20$	Low
$0,05 < 0,10$	Good
$0,025 < 0,05$	Excellent
$0,00 < 0,025$	Full

Step 4: The estimated distance matrix is obtained by one of the regression methods.

Step 5: The correspondence between the actual distance and the estimated distance values are determined by the stress statistics. The stress statistic and compliance index (R2) account is calculated as follows, [12]

$$S = \sqrt{\frac{\sum_{i<j}(d_{ij} - \hat{d}_{ij})}{\sum_{i<j} d_{ij}^2}}$$

From the equation, the stress statistic should approach zero and the RSQ (R2) correlation coefficient should approach 1. RSQ is the percentage of the variance in the values between the points of interest.

Step 6: Drawing and interpreting coordinates in dimensions [9, 8 , 6].

In this study, it was attempted to determine the position of airline destinations served by Turkish Airlines with respect to each other by the relations between them. Destination locations were calculated considering the like, share and retweet variables for destinations that THY recommended

to their followers on the official social media account Twitter on January 1 - December 31, 2016.

Data are collected manually. These data and the countries / cities from which they are obtained are given in Table 1. The features of airline destinations in the company's tweets are determined based on words like food, shopping, and so on.

Table 1: Countries and city-based destinations that THY recommended on its official Twitter account in 2016.

Country	City	Country	City
Iran		**Ukraine**	Kharkiv
Greece	Athenian	**Vietnam**	
	Thessaloniki	**Albania**	
Croatia	Dubrovnik	**Romania**	Cluj
Slovakia	Kosice	**Seychelles**	
Slovenia	Ljubljana	**Sharm El Seikh**	
Hungary	Budapest	**Azerbaijan**	Baku
mauritius	Port Louis	**Tatarstan**	Boiler
South African Republic	Cape Town	**Russia**	Moscow
Ethiopia	Addis Ababa		Novosibirisk
Madagascar	Antananarivo		Ufa
Panama		**Brazil**	Rio De Janerio
Denmark	Copenhagen	**Serbia**	Belgrade
Czech Republic	Prague	**Britain**	London
	Berlin		Madrid
Germany	Neuschwanstein	**Spain**	Barcelona
	Leipzig		Bilbao
	Cologne		San Sebastian
Norway	Lofoten Islands	**Italy**	Venice
United Arab Emirates	Abu Dhabi		Rome
	Dubai		Bologna
Portugal	Porto	**Sweden**	Stockholm
	Lisbon		new York
Netherlands	Amsterdam	**America**	Atlanta
China	Shanghai		Miami
	Pekin		San Francisco
France	Lyon		Los Angeles
	Nice	**Latvia**	Riga (Latvia)
	Paris	**Cuba**	Havana
	İstanbul	**Japan**	Tokyo
	Nevşehir_Kapadokya	**Venezuelan**	Caracas (Venezuela)
	Trabzon	**Colombia**	Bogota
	Antalya	**Madagascar**	Antananarivo
	Mardin	**Malta**	
	Kayseri	**Bosnia**	Sarajevo
	Erzurum	**Bulgaria**	Varna
Turkey	Pamukkale	**Kuwait**	
	Şanlıurfa	**Guinea**	Conakry
	Bursa	**Tanzania**	Zanzibar
	Ordu	**Sri Lanka**	Colombo
	İzmir	**Luxembourg**	
	Artvin	**Scotland**	Edinburgh
	Karabük	**Montenegro**	Podgorica
	Kapadokya	**Iraq**	Erbil

3. Results

Data are analysed with the PROXSCAL algorithm in the SPSS 24.00 package program. PROXSCAL is an algorithm that allows multi-dimensional objects to be displayed in less dimension in Euclidean space by taking the smallest squares of their distances to each other [5]. The country and city data generated from the sharing variables in the social media are transformed into the proximity matrix by the PROXSCAL algorithm and the map of the coordinates in the two-dimensional space based on the sharing values of countries that have been analysed by the MDS analysis (Table 2 and Figure 1) is obtained.
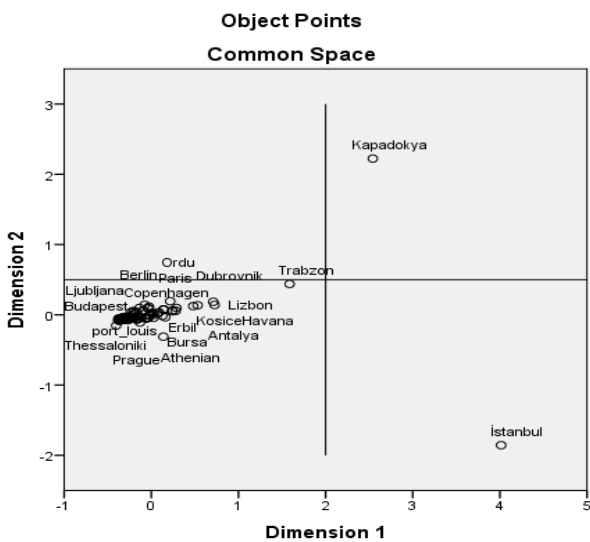

Figure 1: Two-dimensional space representation of trend cities based on likelihood, share and RT rates

The Shepard graph, which relationally describes the transformed proximities and distances among cities, is shown in Fig 2. There is a linear fit between the distance and the differences according to the graph.
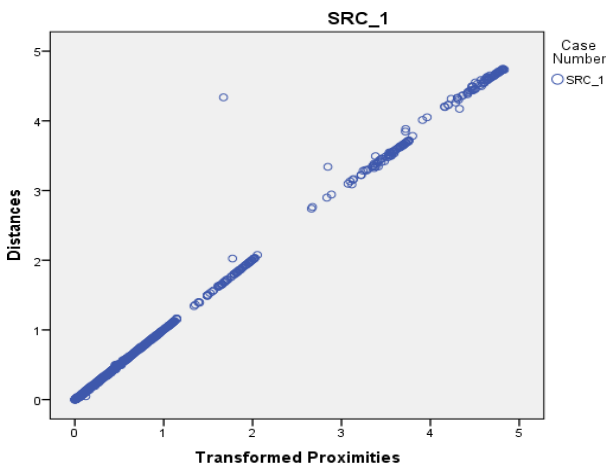

Figure 2: Diagram of the relationship between distances and differences on city basis

Table 3: Stress and reliability values.

Stress	R^2
0,00243	0,99878

As a result of the analysis based on the number of likes, shares and RT on Twitter, the stress statistic in which the appropriateness of Shepard chart is determined is given in Table 3. It is seen that the analysis result shows full compliance and reliability.

Looking at Figure 1, it is seen that Cappadocia and Istanbul is sharply differentiated from other cities according to the share statistics (likes, shares and retweets) in social media.

City destinations that Turkish Airlines has recommended for various reasons in its official twitter account have been included in the scope of the study. Share numbers towards reasons for recommendations of cities were taken into consideration while preparing the data set. In this regard, the coordinates and the map of the two-dimensional space linked to the sharing values of city destinations are shown in Table 4 and Figure 3.

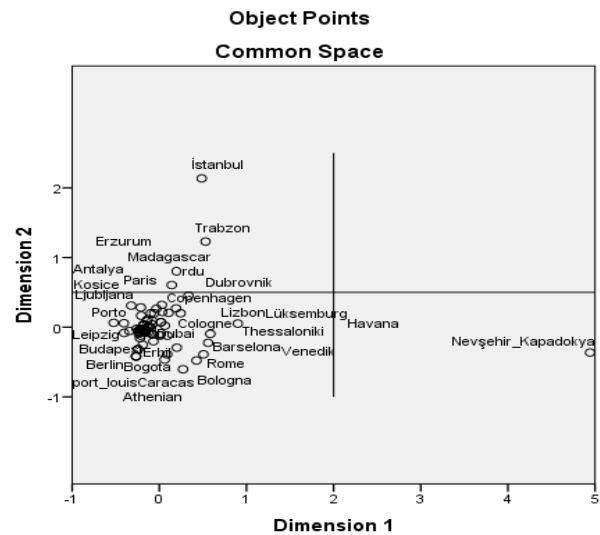**Figure 3:** Two-dimensional space representation of city trends based on reasons for recommendations.

Transformed proximities and distances are shown in Figure 4. There is a close harmony between the distance and the differences according to the graph. As a result of the analysis based on the share numbers on Twitter, the stress statistics in which the appropriateness of the Shepard chart was determined are given in Table 5.
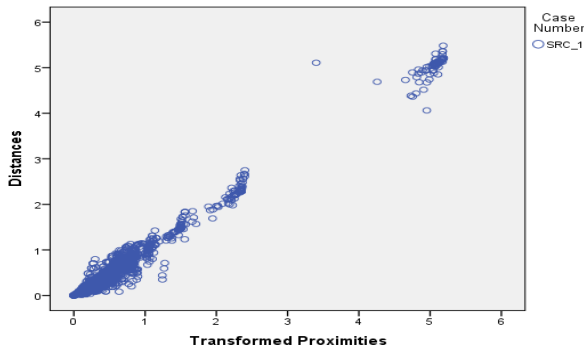
Table2: Coordinates of cities on two dimensional space based on likes, shares and RT.

Final Coordinates			Final Coordinates		
Cities	Dimension		Cities	Dimension	
	1	2		1	2
Athenian	0.138	-0.311	Şanlıurfa	-0.034	0.092
Thessaloniki	-0.352	-0.058	Bursa	0.126	-0.015
Dubrovnik	0.711	0.185	Ordu	0.531	0.136
Kosice	0.242	0.050	İzmir	0.245	0.062
Ljubljana	-0.234	0.038	Artvin	-0.167	-0.060
Budapest	-0.201	-0.051	Karabük_Safranbolu	-0.075	0.141
port_louis	-0.207	-0.047	Kapadokya	2.542	2.224
cape_town	-0.311	-0.069	Madrid	-0.222	-0.005
Addis_Ababa	-0.370	-0.075	Barselona	-0.243	-0.052
Madagascar	-0.367	-0.072	Bilbao	-0.031	-0.013
Podgorica	-0.370	-0.083	San_Sebastian	-0.318	-0.040
Erbil	-0.047	-0.047	Venedik	0.001	0.027
Copenhagen	0.022	0.026	Rome	-0.200	-0.037
Prague	-0.115	-0.039	Bologna	0.216	0.194
Berlin	-0.135	0.097	Stockholm	0.025	0.001
Neuschwanstein	-0.286	-0.063	New_York	-0.164	-0.070
Leipzig	-0.377	-0.052	Atlanta	0.280	0.057
Cologne	-0.155	-0.021	Miami	-0.147	-0.053
Lofoten Islands	-0.381	-0.074	San_francisco	-0.337	-0.043
Abu_Dhabi	-0.346	-0.075	Los_Angeles	-0.198	0.048
Dubai	-0.187	-0.033	Cluj	-0.225	-0.043
Porto	0.090	0.034	Baku	-0.239	-0.052
Lizbon	0.726	0.140	Boiler	0.141	0.075
Amsterdam	-0.362	-0.083	Moscow	0.141	0.075
Edinburg	-0.271	-0.077	Novosibirisk	0.141	0.075
Colombo	-0.288	-0.064	Ufa	-0.403	-0.153
Lüksemburg	0.074	0.028	rio_de_janerio	-0.341	-0.070
Sangay	-0.376	-0.075	Belgrade	-0.325	-0.067
Pekin	-0.164	0.040	London	-0.183	0.027
Lyon	-0.321	-0.066	Riga	-0.314	-0.068
Nice	0.026	-0.043	Havana	0.480	0.124
Paris	0.289	0.097	Tokyo	-0.337	-0.072
Harkiv	-0.263	-0.057	Caracas	-0.014	-0.004
İstanbul	4.015	-1.856	Bogota	-0.025	0.115
Cappadocia	-0.130	-0.109	Antananarivo	-0.372	-0.063
Trabzon	1.587	0.438	Sarajevo	-0.205	0.054
Antalya	0.159	-0.035	Varna	-0.309	-0.039
Mardin	-0.033	-0.041	Kuwait	-0.291	-0.026
Kayseri	-0.063	-0.054	Conakry	-0.326	-0.035
Erzurum	-0.062	-0.047	Zanzibar	-0.092	0.062
Pamukkale	-0.034	0.092			

Table 4: Coordinates of cities in two-dimensional space according to reasons for recommendations.

Final Coordinates			Final Coordinates		
Cities	Dimension		Cities	Dimension	
	1	2		1	2
Athenian	-0.067	-0.203	Şanlıurfa	-0.245	-0.316
Thessaloniki	-0.164	-0.062	Bursa	-0.221	-0.034
Dubrovnik	0.335	0.452	Ordu	0.142	0.605
Kosice	-0.212	0.283	İzmir	-0.081	0.095
Ljubljana	-0.525	0.063	Artvin	-0.131	0.113
Budapest	-0.076	-0.101	Karabük_Safranbolu	0.093	-0.122
port_louis	-0.078	-0.100	Kapadokya	-0.221	-0.034
cape_town	-0.113	0.005	Madrid	-0.146	0.092
Addis_Ababa	-0.181	-0.054	Barselona	0.560	-0.225
Madagascar	-0.221	-0.034	Bilbao	-0.261	-0.024
Podgorica	-0.184	-0.053	San_Sebastian	-0.181	0.034
Erbil	-0.227	-0.077	Venedik	0.585	-0.096
Copenhagen	0.034	0.219	Rome	0.506	-0.390
Prague	0.011	-0.118	Bologna	0.427	-0.479
Berlin	-0.221	-0.034	Stockholm	0.063	0.021
Neuschwanstein	-0.159	-0.040	New_York	0.020	0.072
Leipzig	-0.221	-0.034	Atlanta	0.091	-0.389
Cologne	-0.098	0.201	Miami	-0.081	0.041
Lofoten Islands	-0.187	-0.051	San_francisco	-0.187	0.023
Abu_Dhabi	-0.222	-0.065	Los_Angeles	0.108	0.206
Dubai	0.018	0.070	Cluj	-0.222	-0.157
Porto	-0.208	0.166	Baku	-0.100	-0.089
Lizbon	0.192	0.270	Boiler	-0.221	-0.034
Amsterdam	-0.094	-0.008	Moscow	-0.267	-0.420
Edinburgh	-0.215	-0.123	Novosibirisk	-0.267	-0.420
Colombo	-0.128	-0.077	Ufa	-0.267	-0.420
Lüksemburg	0.245	0.201	rio_de_janerio	-0.156	-0.074
Sangay	-0.186	-0.052	Belgrade	-0.122	0.003
Pekin	0.002	-0.116	London	-0.033	0.265
Lyon	-0.196	-0.023	Riga	-0.115	0.005
Nice	-0.221	-0.034	Havana	0.901	0.052
Paris	0.030	0.320	Tokyo	-0.137	-0.004
Harkiv	0.061	-0.466	Caracas	0.273	-0.604
İstanbul	0.486	2.136	Bogota	0.201	-0.294
Nevşehir_Kapadokya	4.943	-0.364	Antananarivo	-0.180	-0.055
Trabzon	0.531	1.229	Sarajevo	-0.344	-0.056
Antalya	-0.323	0.309	Varna	-0.178	0.040
Mardin	-0.060	0.199	Kuwait	-0.236	-0.094
Kayseri	-0.404	-0.082	Conakry	-0.225	-0.080
Erzurum	-0.406	0.057	Zanzibar	-0.189	-0.252
Pamukkale	-0.245	-0.316			

Figure 4: Transformed proximities and distances diagram.

Table 5: Stress and reliability values

Stress	R²
0,0022	0,99892

The coordinates and the map of the two-dimensional space due to the highlighted features of the destinations are shown in Table 6 and Figure 5.

Table 6: Map of the two-dimensional space due to the highlighted features of the destinations

Final Coordinates		
	Dimension	
	1	2
History	0.708	0.134
Landscape	1.077	-0.420
Price	-0.492	0.452
Discovery	0.592	0.534
Entertainment	-0.236	-0.215
Food	-0.453	0.034
Sport	-0.401	-0.081
Shop	-0.353	0.032
New_Destinations	-0.441	-0.470
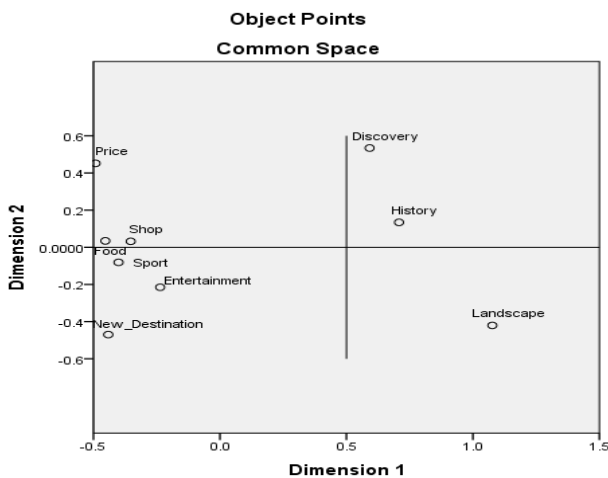
Figure 5: Two-dimensional space representation of reasons for recommendations.

Figure 6 shows the transformed proximities and distances among the highlighted features of the destinations.

Figure 6: Transformed proximities and distances diagram.

Table 7 shows the stress statistics for which the appropriateness of the Shepard chart was determined as a result of the analysis based on the number of shares.

Table 7: Stress and reliability values

Stress	R²
0,02459	0,99414

Looking at Figure 5, it is seen that the destinations are completely separated from the others due to the price, discovery, history and landscape.

On the other hand, food, entertainment, sports, shopping and entertainment appear to have been similarly exposed and shared by Twitter users. Depending on the reasons for the recommendation, the discovery, the history and the landscape have come close to each other.

4. Conclusions and Implications

Social media, an indispensable element of digital communication, and the online behavior of people using this media are also sources of new marketing strategies for businesses. Among the increasingly popular applications of social media, Twitter is transforming into a platform where millions of active users and constantly flowing data traffic can instantly get feedback about businesses' products and services. Therefore, consumers 'and customers' reactions to the visual and written content of the

companies they submit to the followers from the official Twitter addresses are very important.

The information about how businesses liked and shared their products on social media was evaluated as a reference point in the product-oriented approach in this study and tried to reveal the general tendency of social media users. In this direction, we analysed the destinations offered by Turkish Airlines on its official Twitter account to its followers in 2016, based on the reasons for the recommendation and share statistics.

According to the results of the analysis, it is seen that Cappadocia and Istanbul are sharply separated from other destinations. Thus, it is seen that the two destinations are more appreciated by Turkish users. So, it would be appropriate to concentrate social media promotional activities in these two cities, which are more popular by users. When the results are considered with the demonstration of the reasons for recommendation in the two-dimensional space, it appears that price, discovery, history and landscape elements are at the forefront. This refers to the tendency of followers to share destinations made by promoting these elements. Another insight gained from the study is the formation of a cluster of food, shopping, sports and recreational activities. It would be useful for airline companies to use these elements together when promoting destinations in their social media accounts. In addition, cities such as Trabzon and İstanbul, which stand out with price. Discovery and history, have been observed to be clustered in the same places. Landscape is separated from other reasons for recommendations. Cappadocia seems to be closer to this factor, discovery and history. Given the destinations in American continent and Europe, it appears that the reasons for food, sports and entertainment are related to sharing.

We assume that this study, which is about how share statistics in social media positions products and services in two-dimensional space, will contribute to both the data set and the multivariate statistical methods.

Similar social media data are analysed with different statistical techniques and the results put into the literature in the ongoing studies.

5. Symbols

@: This symbol identifies the user name. By putting this symbol at the beginning of the user's name, users can find other users they are looking for, or they can share by referencing them.

#: This symbol, referred to as a hashtag, is placed before the letters or words to allow messages to be seen by people who are not followers of the user.

⟲ : It allows users to re-share each other's messages in a way that people on the follower lists can see.

♥ : Users who say that they like the messages sent.

↰ : This is the symbol that allows person who replies or comments about the entire person who is referenced by the @ symbol in the content.

📷 : This is the symbol that adds photographs or videos to the message.

GIF : It allows to add animated pictures called GIF (Graphics Interchange Format) to the message.

☰ : It is a symbol that allows to place small questionnaires in the message for the purpose of what other users vote.

📍 : It allows to add geographic location of the user in the message

References

[1]   S, Asur, and B, Huberman, "Predicting The Future With Social Media," In *Web Intelligence And Intelligent Agent Technology (WI-IAT), 2010 IEEE/WIC/ACM International Conference On,* 1, p. 492-499, 2010, August.

[2]   P. R, Berthon, L, Pitt, and Campbell C, "When Customers Create The Ad," California Management Review, 50(4): 6–30, 2008.

[3]   I, Borg, and P. J, Groenen, *Modern Multidimensional Scaling: Theory And Applications*. New York, USA: Springer Science & Business Media, 2005.

[4]   D. Boyd, S. Golder, and G. Lotan, "Tweet, Tweet, Retweet: Conversational Aspects Of Retweeting On Twitter," In *System Sciences (HICSS), 2010 43rd Hawaii International Conference On* (p. 1-10). IEEE. (2010, January).

[5]   F. M. T. A. Busing, J. J. Commandeur, W. J. Heiser, W. Bandilla, and F. Faulbaum, "PROXSCAL: A Multidimensional Scaling Program For İndividual Differences Scaling With Constraints," *Softstat*, *97*, 67-74, 1997.

[6] S. Bülbül, and A. Köse, "Türkiye'de Bölgelerarası İç Göç Hareketlerinin Çok Boyutlu Ölçekleme Yöntemi İle İncelenmesi," *İstanbul Üniversitesi İşletme Fakültesi Dergisi*, *39*(1), 75-94, 2010.

[7] K. Heinonen "Consumer Activity İn Social Media: Managerial Assroaches To Consumers' Social Media Behavior," *Journal Of Consumer Behaviour*, *10*(6), 356-364, 2011.

[8] Ş. Kalaycı, SPSS Uygulamalı Çok Değişkenli İstatistiksel Teknikleri. İstanbul, Türkiye: Asil Yayın Dağıtım Ltd., 379-396, 2005.

[9] J.F. Hair, R.E. Anderson, R. L. Tatham, W. C. Black, Multivariate Data Analysis. (Fifth Edition), Prentice-Hall Inc., USA, p. 536-539, 1998.

[10] A. M. Kaplan, and M. Haenlein, "Users Of The World, Unite! The Challenges And Ossortunities Of Social Media," *Business Horizons*, *53*(1), 59-68, 2010.

[11] Y. Köksal, and Ş. Özdemir, "Bir İletişim Aracı Olarak Sosyal Medya'nın Tutundurma Karması İçerisindeki Yeri Üzerine Bir İnceleme," *Süleyman Demirel Üniversitesi İktisadi and İdari Bilimler Fakültesi Dergisi*, *18*(1), 2013.

[12] J. B. Kruskal, "Multidimensional Scaling By Optimizing Goodness Of Fit To A Nonmetric Hypothesis," *Psychometrika*, *29*(1), 1-27, 1964.

[13] H. Kwak, C. Lee, H. Park, and S. Moon, "What İs Twitter, A Social Network Or A News Media?," In *Proceedings Of The 19th International Conference On World Wide Web* (pp. 591-600). ACM. 2010, April

[14] W. G. Mangold, and D. J. Faulds, "Social Media: The New Hybrid Element Of The Promotion Mix," *Business Horizons*, *52*(4), 357-365, 2009.

[15] A. Oğuzlar, "Çok Boyutlu Ölçekleme Analizi Yardımıyla Avrupa Birliği Üyeliğini Etkileyen Faktörlerin Konumlandırılması", Uludağ Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 24(1), S. 33–43, 2005.

[16] Ş. Tüzüntürk, "Çok Boyutlu Ölçekleme Analizi: Suç İstatistikleri Üzerine Bir Uygulama," *Uludağ Üniversitesi İktisadi and İdari Bilimler Fakültesi Dergisi*, *28*(2), 71-91, 2009.

[17] Z. B. A. VURAL, and M. Batb, "As A New Communication Environment: A Research On Ege Universıty Faculty Of Communication," *Journal Of Yasar University*, *20*(5), 3348-3382, 2010.

[18] We Are Social, "http://wearesocial.com/uk/blog/2017/01/digital-in-2017-global-overview". [Date of Access: 24.10.2017]