Ordu Üniversitesi Sosyal Bilimler Araştırmaları Dergisi, 8(3), 557-577, Kasım 2018
Ordu University Journal of Social Science Research, 8(3), 557-577, November 2018

ISSN: 1309-9302
http://dergipark.gov.tr/odusobiad

ODÜ SOBİAD

Investigation of the Website Communication Quality: A Study on Turkish Container Ports

Web Sitesi İletişim Kalitesinin İncelenmesi: Türk Konteyner Limanları Üzerine Bir Çalışma

Gül DENKTAŞ ŞAKAR [1]

Geliş Tarihi: 31.07.2018 / **Düzenleme Tarihi:** 02.11.2018 / **Kabul Tarihi:** 19.11.2018

Abstract

Seaports operate in highly competitive business environment. One of the strategic components to survival in such competitive market conditions is the development of sound marketing communication strategies in order to present themselves to their existing and potential customers as well as other stakeholders. Due to their importance in reaching many users with adaptable and informative contents, websites play a critical role in marketing communication strategies of ports. Main aim of this study is to provide an insight regarding the characteristics of Turkish container ports' websites in terms of website communication quality. In addition, an evaluation regarding the specific dimensions in Turkish container ports with high handling volumes is presented. The 2QCV3Q model was employed to identify website communication quality of ports' websites. Content analysis was performed on the websites of Turkish container ports based on the dimensions that were adapted to container port industry. An analysis of the extent to which Turkish container ports use their websites in their marketing communication strategies provided a context for a deeper understanding regarding the availability of the attributes in the model. As the first study to explore the website characteristics of Turkish container ports, this research supports the theoretical background regarding the website communication quality, and also provides recommendations on improving the quality of websites to the practitioners in the container port industry.

Anahtar kelimeler: Websitesi İletişim Kalitesi, Denizcilik, Konteyner Limanları, İçerik Analizi, Pazarlama İletişimi

Özet

Limanlar son derece rekabetçi bir iş çevresinde hizmet vermektedirler. Rekabetçi pazar koşullarında hayatta kalabilmedeki stratejik bileşenlerden biri, mevcut ve potansiyel müşterileri ile birlikte diğer paydaşlara kendilerini tanıtmak için etkin pazarlama iletişimi stratejilerinin geliştirilmesidir. Uyarlanabilir ve bilgilendirici içerikleriyle birçok kullanıcıya ulaşmadaki önemi nedeniyle web siteleri, limanların pazarlama iletişim stratejilerinde önemli bir rol oynamaktadır. Bu çalışmanın temel amacı, Türk konteyner limanlarının web sitelerinin özelliklerine ilişkin olarak web sitesi iletişim kalitesi açısından bir bakış açısı sağlamaktır. Ayrıca, yüksek hacimli elleçleme yapan Türk konteyner limanlarında belirli boyutlara ilişkin değerlendirmeler yapılmıştır. Limanların web sitelerinin iletişim kalitesini belirlemek için 2QCV3Q modeli kullanılmıştır. Konteyner limancılık sektörüne uyarlanmış boyutlar ışığında, Türk konteyner limanlarının web siteleri içerik analizi ile incelenmiştir. Türk konteyner limanlarının kendi web sitelerini pazarlama iletişimi stratejilerinde kullanma derecesinin analizi, modeldeki özelliklerin varlığı hakkında daha derin bir bakış açısı sağlamaktadır. Türk konteyner limanlarının web sitelerinin özelliklerini inceleyen ilk çalışma olarak bu araştırma, web sitelerinin iletişim kalitesi ile ilgili teorik altyapıyı desteklemektedir ve aynı zamanda limancılık sektöründeki uygulayıcılara web sitelerinin kalitesini iyileştirmeye yönelik öneriler sunmaktadır.

Key words: *Armenian, Ottoman, Relocation, Sivas, Kayseri, Pınarbaşı*

Introduction

Marketing on the internet has enabled companies to reach as many customers as possible. Also, companies can widen their circle of influence through communicating with their customers, prospects and the public by using their websites. Developments in the Internet and WWW have changed the market environment of many businesses and websites have created many opportunities and evolved as critical image building tools of companies in 21st century (Conolly –Ahern and Broadway, 2007: 343). Developing an effective website has become important for businesses to strengthen their customer relationships and gain a larger market share. Businesses need to invest in website quality, evaluation and design in order to provide better services for the users (Carlos and Rodrigues, 2012: 274). Considering the developments in e-commerce activities in the world, more research on website evaluation, design, quality assurance, user's behavior on the web and factors affecting the customers' behavior is needed (Davidavičienė and Tolvaišas, 2011). Although the importance of B2B e-commerce is accepted in business environment, there is limited academic attention on identification of the factors leading to the website success and communication quality (Chakraborty et al. 2002).

As one of the industries in B2B markets, seaports operate in highly competitive environment and hence, it becomes challenging for seaports to continue their growth. Considering the developments taking place in hinterland regions, it becomes harder to understand the captive and contestable hinterland regions. This results in seaports to focus more on

[1] Doç. Dr. Dokuz Eylül Üniversitesi, Denizcilik Fakültesi, Lojistik Yönetimi Bölümü, İzmir, Türkiye.
e-posta: gul.denktas@deu.edu.tr

attracting and retaining customers in their marketing activities (Cahoon, 2007: 159). Marketing communication efforts of ports play a critical role in delivering the right message and presenting themselves to their customers and other stakeholders. As Cahoon (2007: 151) highlighted, ports should strive to communicate effectively with the market in order to reduce any perceptions regarding the risk and uncertainty. An approach to eliminate such information gap can be the development of high quality websites for seaports to establish close relationships with their stakeholders. Considering their potential capability of communicating with wide international audience with rich and adaptable contents (Doolin et al. 2002), the role of websites and their content in marketing activities of seaports are needed to be investigated. Despite its importance, the evaluation of website communication quality by container ports is unexplored, where a large research gap exists. To fill the gap in the relevant literature, this study focuses on the website communication quality of Turkish container ports through the application of a specific website quality evaluation, namely 2QCV3Q model. This model is modified in accordance with the characteristics of the container port industy and related dimensions and attributes are evaluated. The aim of this research is to provide an evaluation of website communication quality of Turkish container ports. The study attempts to answer two research questions as listed below:

RQ 1: What are the characteristics of Turkish container ports' websites in terms of website communication quality?

RQ 2: Which dimensions of website communication quality are evident in Turkish container ports with high handling volumes?

The study is organized as follows. Following the introduction, literature review on website quality evaluation and ports' marketing communications and role of websites in port marketing is presented. In Section 3, the methodology explaining the model employed, determination of dimensions and attributes and the sample of the study is introduced. In Section 4, the presented methodology is applied to container ports in Turkey and the findings of the study are discussed. Section 5 presents the conclusion. Lastly, the study concludes with the implications for practitioners and scholars, the limitations and the suggestions for future research.

Website Communication Quality Evaluation

Businesses can access to many customers and provide them not only general information about their products or services but also the opportunity to perform in an interactive way (Carlos and Rodrigues, 2012: 274). There are critical benefits of website evaluation for businesses such as customer retention, positive return on investment, and leadership within the competition (Cronin, 2003). Websites are considered as critical tools for communicating all the elements of the marketing communication mix by allowing a selamless link between the customer and the company. As Plamer (2002) dictated, websites are not only limited to the use of customers, but also media, employees and other stakeholders can also access and use websites. Websites have numerous benefits both for the business and their customers. While they become a critical channel for reaching various stakeholders (Maynard and Tian, 2004: 286), they also act as 24 hours open online offices as well (Kiani, 1998: 185). Hence, use of websites may generate higher sales, market share and profitability due to the access of gretater number of users without any limitation (Pflughoeft et al. 2003).

Scholars have long advocated the importance of evaluating website effectiveness and detailed evaluation of websites has become a critical point for both practitioners and scholars to consider (Chiou et al. 2010: 282). Developments in e-commerce have made businesses' success more dependent on website quality (Mich et al. 2003). When a website has problems in its design, it becomes difficult and undesirable for users (Youngblood, 2013: 12). As a newly emerging research area, no globally accepted definition of website evaluation or standardization in evaluation is available (Law et al. 2010). This has resulted in the emergence of various academic studies using various approaches and models in website quality evaluation. Some models were suggested in the evaluation of website quality. While some scholars focused on a single evaluation method for website quality evaluation (McCall et al. 1977; Mich et al. 2003; Kavindra and Praveen, 2014), hybrid evaluation models (Burmaoğlu and Kazançoğlu, 2012; Çebi, 2013) were also employed. While some studies in quantitative nature concentrated on performance indices or scores to understand the overall quality of a website (Faba-Perez et al. 2005; Cox and Dale, 2002; Yeung and Lu, 2004), qualitative studies assessed website quality without using any indices or scores (Heldal et al.2004; Liang and Lai, 2002).

Since websites are critical points of contact for many businesses, it is important to evaluate their effectiveness or quality to understand whether or not the business is providing the quality of information to satisfy its website users (Kim and Stoel, 2004: 109). Moreover, some studies examined website quality from users perspective (Lin and Lu, 2000; Aladwani and Palvia, 2002; Ranganathan and Ganapathy, 2002). It is also possible to classify studies based on the topics of interest such as; content (Liu et al. 1997; Cheung and Huang, 2002; Robbins and Stylianou, 2003); user acceptance (Koufaris, 2002); importance of some characteristics such as interactivity (Olson and Widing, 2002); user satisfaction (Devaraj et al. 2002), importance of website background (Stevensson et al. 2000); quality (Barnes and Vidgen, 2003) website usability and design (Agarwal and Venkatesh, 2002; Palmer, 2002; Huang and Cappel, 2012, Lavie and Tractinsky, 2004; Shawgi and Noureldien, 2016: 5), website accessibility (Al-Mouh and Al-Khalifa, 2016; Loiacono et al. 2009). Similarly, Mich et al. (2003:35) provided three main areas of research in website quality as; models for evaluating software quality, usability-focused perspective focusing on human-computer interaction and models purely concentrating on website evaluation or design. Design characteristics mainly determine the design quality of a website and due to its complex nature, improving the design quality is considered as a hard task (Lee and Koubek, 2010: 531).

Many studies suggested some factors to be considered in website quality evaluation. Evans and King (1999) suggested a B2B website evaluation tool including five aspects as; interaction, homepage, overall site design and performance, content of the text; audio and visual components and involvement. Liu et al. (2000) listed quality dimensions of e-commerce websites as, use of system, service quality, information topic, learning capability, playfulness and system quality.

Drăgulănescu (2002: 247) listed accuracy, authority, coverage, currentness, density, interactivity, objectivity, and promptness. Chung and Law (2003) listed information regarding facilities, customer contact, reservation, surrounding area and management of website in investigating hotel websites. Van Iwaarden et al. (2003) suggested the use of quality dimensions in website evaluation and they listed such dimensions as; tangibles (navigation, search options etc.), reliability (trustworthiness of the service and the company providing the service), responsiveness (ability to help customers and respond immediately), assurance (the ability of the company to assure trust and confidence) and empathy (customized attention and care to customers). Similarly, Lowry et al. (2008) listed responsiveness, competence, and quality of information, empathy, web assistance and callback systems. Four dimensions of website quality were identified by Aladwani and Palvia (2002) as ; technical adequacy, specific content, content quality and web appearance. Bai et al. (2008) concentrated on two factors in website quality as functionality and usability. While functionality included the information regarding the purchase, service/product, destination, information quality and contact details, usability concentrated on language, layout, graphics, information architecture and user interface-navigation.

Various industries have been investigated in terms of website evaluation such as education (Carlos and Rodrigues, 2012; Manzari and Trinidad 2013), tourism (Park and Gretzel, 2007; Benovolo and Spinelli, 2018), e-government (Burmaoglu and Kazancoglu, 2012), e-commerce (Davidavičienė and Tolvaišas, 2011), banking (Klaus and Nguyen, 2013, Rondović et al. 2017), fishery sector (Kamanlıoğlu and Emiroğlu, 2009), print industry (Virtsonis and Harridge-March, 2008). In context of shipping and logistics, evaluation of website communication quality is limited. In accordance with this scarcity, this study focuses on container ports and their websites through content analysis based on 2QCV3Q model. Following section discusses the role of websites in seaport marketing activities and provides the related literature from seaport perspective.

Websites in Marketing Communication of Seaports

Seaports play an important role in providing services to shipping lines and to cargo owners. Considering the operations, management structure and characteristics, ports are not prototype and services provided by ports are highly heterogeneous in nature (UNCTAD, 1995). In line with the competition in the port industry, ports struggle to be more customer-oriented (Brooks and Schellinck, 2015). While retaining the current customers, understanding their needs and expectations and achieving customer satisfaction and customer-orientation are critical attempts for seaports, attracting new customers is also another challenge for seaports to increase their market share and achieve a strong recognition in the market as well. As Cahoon (2007: 151) dictated, the use of marketing communications is a considerable strategic tool for seaports to utilize for both attracting new customers and retaining the current ones. Similarly, Murati (2013) listed three major objectives for seaports when developing marketing communication strategies as: attracting new customers and providing information to existing ones, informing the local community regarding the port's contribution and information sharing with employees. Promotion mix including advertising, public relations, sales promotions, personal selling together with word-of-mouth communication facilitates the development of the relationship of the port with various stakeholders. In addition, it also plays a key role in enpowering the communication between the port, port users and potential target groups in order to increase port's awareness (Cahoon, 2007: 151). Two main perspectives in ports' communication strategies were suggested by Parola et al. (2013) as; adoption of novel media tools such as social media and involvement of additional content to the traditional methods and tools. Traditional tools used by seaport in their marketing communication strategies mainly include advertising, personal selling, organizing port days, direct mailing, organizing press days and conferences, attending school visits and being speaker at conferences (Cahoon, 2007, Notteboom et al. 2015).

In their structured literature review on seaport research, Woo et al. (2011) dictated that there are limited number of studies focusing on the marketing aspects of ports constituting only 1.3.% of total studies. Such studies aimed to reveal the factors contributing to the marketing and communication strategies of seaports from marketing communication perspective (Pando et al. 2005; Cahoon, 2007: 152; Parola et al. 2013; Notteboom et al. 2015; Çalışkan and Esmer, 2018: 61; Parola et al. 2018). While Pando et al. (2005) analyzed the current tools of marketing at world's major ports by investigating the views of marketing executives, Cahoon (2007: 151) discussed the benefits of marketing communication tools to seaports through an empirical study conducted in Australian seaports. Studies focusing on disclosure in port marketing strategies mainly discussed the importance of developing close relationships with stakeholders (Notteboom et al. 2015) and determinants of disclosure in the annual reports of seaports and their impacts on changing marketing communications environment of seaports (Parola et al. 2013). Social media and its role is in seaport marketing and marketing communications is in its infancy and Çalışkan and Esmer (2018: 61) examined the social media post contents of Turkish container ports and discussed the similarities and differences between Turkish ports and selected container ports in the world. In addition to the social media tools and the posts generated through such tools, websites of seaports can be considered as critical platforms for exchanging related information about the port (infrastructure and superstructure), services, investments etc. with relevant stakeholders. As Murati (2003) dictated the website use for marketing communication has become a critical factor that seaports should continuously update the appearance of their websites by adding more information and increasing the level of interaction. By supporting this, Notteboom et al. (2015) argued that many seaports strive to develop their websites in order to manage their relationships and communication with their stakeholders and they also provide online documents such as sustainability reports and other publications through their websites. As Cahoon (2007: 153) asserted, website of Port of Hamburg as of 1997 was one of the first seaport websites in the world. Despite their importance in the marketing communication strategies of seaports, ports' websites and their communication quality have largely been neglected in the current literature. Ateş (2016: 401) conducted a content analysis of Turkish ports with regards to mission and vision statements to understand the productivity perspectives of ports. Candemir et al. (2015) evaluated websites of Turkish marinas within the scope of SERVQUAL. Benevolo and Spinelli (2018: 230) concentrated on websites of tourist ports in Northern Sardinia and analyzed their communication quality. Considering the limited research on seaports and marinas, it was observed that website communication quality was only investigated by Benevolo and Spinelli (2018: 230) within the sample of tourist ports in Northern Sardinia. Building upon this, the methodology and the website communication

evaluation model applied in the research is explained in the next section together with the main steps taken in the research.

Methodology

The study was built upon website quality evaluation model developed by Mich et al. (2003:35) in order to provide an evaluation of website communication quality of Turkish container ports. The 2QCV3Q model is originated from the 7 loci of Ciceronian rhetoric on which it is based on *Qvis* (Who), *Qvid* (What), *Cvr* (Why), *Vbi* (Where), *Qvando* (When), *Qvomodo* (How), *Qvibvs Avxiliis* (With what means and devices) (Mich et al. 2003: 36). Dimensions of the model are listed in Table 1. The model was built on seven dimensions as: Identity, Content, Service, Location, Maintenance, Usability, and Feasibility. This model allows a multistakeholder perspective considering the views of the site's sponsor, its users and those involved in its design and implementation (Mich et al. 2003: 42). Although there are advantages of applying heuristic evaluations in which a group of experts provide evaluations or empirical usability tests in which different users are employed, such evaluations are considered as costly methods necessitating the web sites to be evaluated according to their satisfaction (Signore, 2005: 30). High consumer or user involvement and even experimental environment is required in such evaluations (Hung and McQueen, 2004: 32). Unlike such evaluation methods, 2QCV3Q model can be considered as a flexible model for the evaluation of web site quality. Two factors differentiating this model from other is scalability (evaluation at varying degrees) and flexibility (ability to apply in various industries). The model provides a solid reference framework for requirements analysis. In addition, the model does not require a large training investment and it allows the use of quantitative and qualitative metrics. The model also allows a more efficient and cost effective evaluation process by facilitating communication and negaotiation among the parties involved in site development and management (Mich et al. 2003). Considering such factors in website evaluation and the main advantages of the model, 2QCV3Q model was selected in this study. The main logic behind the use of such model is that it is flexible, it can be customized for different industries and applicable for the evaluation of website quality from different perspectives (Kumar et al. 2015). Mich et al. (2003: 42) asserted that this model was applied in various fields as; tourism, education, business and customer services. In Turkey, this model was used by Kesici et al. (2017: 664) to evaluate websites of top 30 firms with the highest Research and Development (R&D) spending listed in Turkishtime. Also Kamanlıoğlu and Emiroğlu (2009: 65) employed this model to evaluate websites of companies in fishery sector in Turkey. As seen in Table 1, the model was based on seven dimensions as: Identity, Content, Services, Location, Maintenance, Usability, and Feasibility.

Table 1: Dimensions of the 2QCV3Q (7Loci) meta-model

QVIS? (Who?)	Identity
QVID? (What?)	Content
CVR? (Why?)	Services
VBI? (Where?)	Location
QVANDO? (When?)	Maintenance
QVOMODO? (How?)	Usability
QVIBUS AVXILIIS? (With what means?)	Feasibility

The seven specific dimensions modified for container ports were defined with wide set of attributes showing the characteristics of the website to be checked and assessed (See Appendix 1). Seven dimensions and their related attributes were mainly borrowed from Mich et al. (2003). In addition, since Benevolo and Spinelli (2018: 230)'s study concentrated on marinas in Northern Sardinia, some port specific variables were borrowed from this research. Moreover, Kesici et al. (2017: 668)'s study was also taken into account in the wording of the levels for each attribute. These dimensions can be explained as (Mich et al. 2003: 42; Benevolo and Spinelli, 2018: 234):

- *Identity (quis-who):* This dimension consists of attributes such as logo, ability to present a tale of the territory, port history, organization chart and other attributes explaining the identity of the port.

- *Content (quid-what):* It focuses on the richness of the content provided by the website including many dimensions as photos and information regarding the port infrastructure and superstructure, service provided to ships and containers etc.

- *Location (ubi-where):* It assesses the website reachability by considering mainly an intuitive and easy-to-remember domain name and contact details of website manager and the possibility for the user to connect with social media tools through the visit of the website.

- *Services (cur-why):* This dimension ensures that the website is able to support the service provider and the users. A container port website should present weather forecasts, online customer portal, maps etc. to the users.

- *Maintenance (quando-when):* This dimension considers the website maintenance including the presence of under-construction pages or errors/typos in text etc.

- *Usability (quomodo-how):* This is about the characteristics which allow the user to visit the website without any costs in terms of time, effort, or expenditure. Main features can be listed as; availability in different languages, menus and maps, search function etc.

- *Feasibility:* The last dimension includes all aspects related to the ease of use in websites including skill requirements, download options, printing and saving of pages etc.

Criteria selection and determination of their attributes play a critical role in the assessment of website quality. Model for the evaluation of a website mainly includes the criteria, related attributes and their relationships. There is no globally accepted website evaluation method since the evaluation method and the criteria should be customized to the industry and the selection criteria should be different for websites from various industries and dependant on the characteristics of goal metrics (Rondović et al. 2017: 421). Hence, the criteria and their attributes were modified and adapted to container port industry. Following the adaptation of the current 2QCV3Q model to the container port industry by the author, two scholars who are expert in port management and marketing were contacted and they were asked to review the content and the wording of the dimensions and the related attributes in the model. Considering the suggestions of the scholars with regards to additional attributes which are specific for container port industry and changes in the wording of the attributes, the final version of the evaluation form was prepared. Five basic evaluation perspectives were identified by Law et al. (2010: 297) as; counting, user judgment, automated, numerical computation, and combined methods in website evaluation. Counting method determines the richness of the website by investigating its content in detail and it is used to understand whether certain attributes are existent on the website or not (Rondović et al. 2017: 422). While the user judgment method is applied to review the website from the users' perspective, the automated method uses software supported reviews while eliminating the subjective evaluation of the evaluators. Numerical computation method aims to achieve numerically expressed achievement by listing the criteria and attributes and their weight coefficients. In addition, combination of two or methods can be used in order to eliminate the drawbacks of each evaluation perspective (Rondović et al. 2017: 422). In this study a hybrid evaluation perspective by combining counting and numerical computation was employed to achieve a deeper understanding of the website content with weight coefficients. The dimensions included various number of attributes and they were considered as nominal variables in the study. Level of categorization for attributes was considered same within the dimension. While the attributes in some dimensions were coded as 0-1 (Location, Maintenance, Feasibility), some of them (Identity, Content, Service, Usability) were coded as 0-1-2 as shown in Appendix 1. When positive features are available, 1 point (if not available 0), and if there are negative features 0 point (if not available 1) were coded. Similar approach was also employed in the relevant studies of Kesici et al. (2017: 664) and Kamanlıoğlu and Emiroğlu (2009: 65).

Container ports in Turkey constituted the sample of the study. Table 2 lists the names of ports, TEU handled as of 2017 and management status of the ports. The list was constituted by the author through the cross check of the ports' services. No handling statistics was provided for Hopaport and Port of Çanakkale. These ports were included in the sample since they were listed as container ports in Çalışkan and Esmer's (2018: 64) study and they had related information regarding container handling activities in their websites. Container ports in the sample were categorized into three groups as private, commercialized and public ports depending on their management structure. In Turkey, private ports handle more than 90% of total cargoes and these ports are companies of Turkish origin (Esmer and Duru, 2017). Some of the private ports are operated by global terminal operators as APM, TIL, GTL, DP World, Cosco Pacific and PSA (Çalışkan and Esmer, 2018: 64). Since such ports' websites were sometimes directed to the website of the global terminal operator, specific terminal in Turkey was selected and website of the specific website of the port in Turkey was considered for the analysis.

Content analysis which was considered as a common method used in analyzing the website content (Okazaki, 2004) was employed in the study. Web sites were analyzed between 17.07.2018-21.07.2018. A total of 2106 data entry for 26 container ports was conducted. Research was limited to container ports in Turkey and other ports handling dry and liquid bulk cargoes, wheeled cargoes, passengers were excluded from the research. The main logic behind the exclusion of other ports from the sample was basically due to the difference in market types in the shipping industry. There are considerable differences between tramp shipping and liner shipping markets with regards to the characteristics of cargoes, ships, freight rates and sailing schedules (Stopford, 2009). Since container transport was classified under liner shipping industry where there are many customers (shippers/freight forwarders, agencies, logistics companies), improved IT structure and marketing efforts, container ports and accordingly their websites were considered to include more details regarding the ports. On the contrary, dry bulk ports and RO-RO ports mainly serve to a limited number of customers by focusing on relatively niche markets. Considering the seven dimensions of the model, an evaluation form with 81 attributes was prepared for website evaluation. Objectivity was achieved by conducting the website evaluation without the involvement of users and scores were measured according to the availability of the attributes in the related port website. Following the evaluation process of the ports' websites, another scholar specialized in maritime transport and logistics conducted a follow-up control of 81 attributes in order to ensure objectivity and site scores were calculated for each port.

Table 2: The Sample of the Study

Port	Container Handled (TEU-2017)	Status
Marport	1.711.357	Private
MIP (Mersin)	1.591.983	Commercialized
Kumport	1.063.246	Private
Asyaport	1.002.133	Private
İzmir Alsancak	639.306	Public
Yılport-Gebze	499.283	Private
Gemport	474.019	Private
DP World Yarımca	437.047	Private
Evyapport	369.659	Private
Mardaş	357.264	Private
Nemport	313.596	Private
Ege Gübre (TCEEGE)	286.926	Private
Limak İskenderun	269.583	Commercialized
Borusan	241.971	Private
APM (Izmir)	207.000	Private

Port Akdeniz	200.117	Commercialized
Assanport	188.132	Private
Rodaport	88.438	Private
Haydarpaşa	86.709	Public
Samsunport	70.027	Commercialized
Çelebi Bandırma	27.162	Commercialized
Limaş	16.038	Private
Akçansa	13.310	Private
Alport Trabzon	9.944	Commercialized
Hopaport	Not available	Commercialized
Çanakkale	Not available	Private

Source: Çalışkan and Esmer, 2018: 64, Türklim, 2017, TCDD, 2018.

Each port's value for each dimension was calculated based on the approach suggested by Kesici et al. (2017:668). Each port's evaluation value (Tf) was calculated considering the attributes for that dimension. In case of Identity, the value of Identity (DIdentity) was calculated based on the evaluation of the attributes of that dimension. Each dimension includes k number of attributes, where k is 6 for Identity (k Idendity = 6). Attributes in Identity dimension are evaluated in three levels (0,1, 2) while attributes in Feasibility dimension are evaluated in two levels (0 and 1). Hence, c is equal to 3 for Identity (cidentity=3), and c is equal to 2 for Feasibility (c feasibility=2). In the calculation of D value, (c-1)*k formula is used. For instance in Identity dimension, assuming that all attributes are rated with the highest value, which is 2 in this dimension. All attributes with highest value of 2 result in 2*6, which is equal to 12. This is the possible maximum value calculated as (c-1)*k =(3-1)*6, which is equal to 12 for Identity dimension. The level of each attribute impacts the evaluation of D and T values. Final value for Identity dimension (DIdentity) is calculated as:

$$D_n = \frac{\sum_{k=1}^{k} S_k \ (actual\ value)}{(c\ -\ 1)\ k\ (possible\ maximum\ value)}\ 100$$

While (c-1)*k formula represents the highest value for a port in a specific dimension, Dn shows the achievement percentage of the port with regards to the highest value. Following the calculation of Dn for each dimension, overall score for each port is the average of DIdentity, DContent, DService, DLocation, DMaintenance, DUsability and Dfeasibility. As an example, in case of Identity dimension for Mersin (MIP) port, every value (0-1-2) of attributes for Mersin port in that dimension were summed in order to calculate the actual value of Identity dimension. Hence, actual value is equal to sum of the value of attributes in the model. Final value for Mersin port in Identity dimension was calculated by dividing actual value by possible maximum value and multiplying by 100 in order to reach percentage. This was calculated as 83.3% for Identity dimension for Mersin port (see Table 10).

In case of attributes where all the ports achieved the same score in terms of levels such as 0, 1 or 2, that attribute was not involved in the calculation. Since such attributes which are "message from top management" (I7), "webcam" (C15), "interaction among users" (L9), "site counter" (M2), "skip intro" (U9),"resolution/browser information" (F2) did not exist in the websites and attributes which are "vertical/horizontal scrolling" (U8), "printing of pages" (F6) and "saving of pages" (F7) were available in every site, they were removed during the calculation. Since there were attributes existing and not existing in all twenty-six ports, it was considered that there is no differentiation between ports. Hence they were not involved in the evaluation.

Findings

In the first part of the findings, results of the content analysis are presented based on each dimension and their related attributes. Then, scores for each container port in the sample are provided and evaluations are made.

Identity: As seen in Table 3, majority of ports' websites had port name in site URL (73.1%) and corporation logo (76.9%). While 46.1 % of the ports provided their both mission and vision statements, 46.1% of the ports did not have any section or information concentrating on mission and vision statements. Although it is critical for ports to present their local area and territory especially for their customers, around 31% of ports did not provide any information regarding their local area. Port history was mainly explained as text (69.1%). An interesting finding was about the existence of organizational chart or any information regarding the management committee. It was seen that majority of Turkish container ports did not provide any specific information regarding their organization or management structure in their websites. Another interesting finding was about the "message from top management" attribute. No port provided any section for message from top management.

Table 3: Findings for Identity Dimension

Attributes in Identity Dimension	Average of Attribute Values	% of each level		
Port name in site URL	1,62	0: 11,5%	1:15,4%	2:73,1%
Corporation logo	1,69	0: 7,7%	1:15,4%	2:76,9%
Mission / vision statements	1,0	0:46,15%	1:7,7%	2:46,15%
Tale/territory regarding the port	1,12	0:30,8%	1:26,9%	2:42,3%
Port history	0,77	0:26,9%	1:69,3%	2:3,8%
Organization chart	0,35	0:69,3%	1:26,9%	2:3,8%

Content: This dimension is the most detailed one within the model consisting of 27 attributes mainly modified for container port industry. As seen in Table 4, most ports had photos of general view, infrastructure and superstructure with high resolution (65.4%, 73.1% and 61.5% respectively). However, in case of photos of handling equipment, it was seen that only half of the ports in the sample paid attention to visual appearance of handling equipment with high resolution (53.8%). Information on the services provided to the ships, cargoes as well as the infrastructure, superstructure and handling equipment of the ports played an important role in understanding the service characteristics of ports. Hence these attributes were evaluated separately. Findings showed that ports preferred to present such information mainly as a separate section, which was attainable with one click. This basically shows that ports prefer to provide detailed information regarding their services to the ships and the containers as well as their infrastructure and superstructure in a separate section rather than providing a summary on the main page. Cahoon (2007: 157) asserted that seaport marketing cannot only be considered as selling a good location but also improved infrastructure and superstructure should be presented to the customers. When ports' websites provide high quality photos of such infrastructure and superstructure, potential and actual customers may be more attracted to the ports' services and may be more willing to investigate other sections in the website as well.

57.7% of ports did not provide any cargo handling statistics on their websites. In the era of improved information technology and information sharing opportunities, it was interesting fact that ports did not provide such handling statistics. This could be due to the existence of other websites presenting latest handling statististics of ports (e.g. TURKLIM provides handling statistics of its members). Another interesting finding was about the hinterland connections of ports and multimodal transport opportunities provided at the websites. 76.9% of ports did not present any information about their hinterland connections (connectivity with railways, highways etc.). This could be due to two reasons. First reason could be due to the fact that these ports did not have any investments or actual connections via railway transport to hinterland regions. In addition, ports might not be aware of the importance of multimodal transport opportunities in their port marketing strategies. Similar findings were found in Çavuşoğlu and Denktaş Şakar's (2013: 48) study on the analysis of European ports' websites and only 34 ports out of 214 were found to present intermodality, multimodal connections on their websites. The service coverage and reputation of the port were basically about the number of shipping lines calling at the port. It was an interesting fact that 61.5% of ports did not have such section on their websites.

While 88.5% of ports did not have a specific section on their innovative actions and strategies, only three ports provided innovation-related information under "innovations" title in other sections of their websites. In Karataş Çetin and Sait's (2014: 84) study on port innovations in Turkey, it was mentioned that ports in Turkey mainly concentrated on eco-innovations (green port), technological (equipment) innovations (automated terminals) and port service innovations (value-added services). Since such categorization was considered out of scope, only specific section with "innovation" title was taken into account in this study. Hence only websites with a separate section titled as "innovation" was considered in this study. It was observed that ports at least provided images and/or multimedia in their websites. In case of certificates listed in the websites, around 43% of the ports provided information regarding the certificates (ISO 9001, ISO 14001, ISO 10002, OHSAS 18001, ISO 14064, green port certificate etc.) and these were attainable.

Table 4: Findings for Content Dimension

Attributes in Content Dimension	Average of Attribute Values	% of each level		
Photos of general view	1,5	0:15,4%	1:19,2%	2:65,4%
Photos of infrastructure	1,56	0:15,4%	1:11,5%	2:73,1%
Photos of superstructure	1,31	0:30,8%	1:7,7%	2:61,5%
Photos of handling equipment	1,15	0:38,5%	1:7,7%	2:53,8%
Information on services provided to ships	0,81	0:26,9%	1:65,4%	2:7,7%
Information on services provided to cargoes	0,96	0:11,5%	1:80,8%	2:7,7%
Information on port infrastructure	0,85	0:19,2%	1:76,9%	2:3,9%
Information on port superstructure	0,88	0:23,1%	1:65,4%	2:11,5%
Information on port handling equipment	0,85	0:23,1%	1:69,2%	2:7.7%
Information on port cargo handling statistics	0,5	0:57,7%	1:34,6%	2:7,7%
Information on hinterland connections (intermodality etc.)	0,23	0:76,9%	1:23,1%	2:0%
Information related to the shipping lines calling at ports	0,46	0:61,5%	1:30,8%	2:7,7%
Information about container port industry, issues related to port industry	0,15	0:92,3%	1:0%	2:7,7%
Innovation-related information	0,12	0:88,5%	1:11,5%	2:0%
Links	0,73	0:57,7%	1:11,5%	2:30,8%
Documents	1,23	0:34,6%	1:7,7%	2:57,7%
Images and multimedia	1,27	0:15,4%	1:42,3%	2:42,3%
Certificates	1,08	0:34,6%	1:23,1%	2:42,3%
Information Related with Stakeholders	1,12	0:42,3%	1:3,9%	2:53,8%
Issues related to social sustainability	0,62	0:46,2%	1:46,1%	2:7,7%
Issues related to environmental sustainability	0,65	0:42,3%	1:50%	2:7,7%
Financial information, annual reports	0,08	0:96,1%	1:0%	2:3,9%
Procedures	0,58	0:61,6%	1:19,2%	2:19,2%
Container tracking	0,67	0:61,5%	1:7,7%	2:30,8%
Distance to other ports	1,08	0:0%	1:92,3%	2:7,7%
Catalogue	0,85	0:57,7%	1:0%	2:42,3%

As a very topical concern for port industries, sustainability was investigated under four attributes (information related with stakeholders, social, economic and environmental sustainability). Since ports have to adopt their operations and strategies to the changing business environment where sustainability is considered as a critical component for competitiveness (Denktaş Şakar and Karataş Çetin, 2012: 304), it is expected that specific sections on sustainability can be available in their websites. Findings show that 53.8% of ports provided information for more than one stakeholder in their websites. Such information was mainly available in "Occupational Safety and Health" sections of the websites. Such stakeholders were mainly the customers, employees, public, suppliers, partners and legal authorities. It was seen that 46.1% of the ports provided specific information regarding their social sustainability actions such as sponsorships, ethical statements, being involved in charity programmes, contribution to the welfare of the public etc. However these companies did not present such information in the context of a sustainability report. In case of environmental sustainability, half of the ports in the sample also provided a specific section on environmental sustainability issues by mainly focusing on green port initiatives, green technology and renewable energy sources etc. Similarly such companies only provided a specific section on this topic but did not upload any report on environmental sustainability. With regards to financial information, only one port provided such information in a separate section. It was seen that only 30.8% of ports provided a section for container tracking. This could be due to the fact that container tracking module was inserted in customer online portal sections of website. Therefore, customers can easily sign in to their accounts with specific password and access all types of information about their containers' status and related documentation. It was verified in the findings of this study that in "Service" dimension, customer online portal was available in most of the ports (73.1%).

Location: Location dimension mainly focuses on the websites' domain name characteristics, contact details of website manager and links to social media accounts of the ports (see Table 5). It should be noted that the study concentrated only on the existence of links related to social media accounts of ports on the websites. While 84.6% of ports had intuitive domain name, only 7 ports provided contact information/link of the website designer (26.9%). Social media has emerged as a critical tool for companies to interact with variety of stakeholders and many B2B companies have begun to integrate their social media activities into their marketing efforts. Under location dimension, specific attributes were listed in order to understand whether or not container ports provided links to their social media accounts. Facebook, Twitter and LinkedIn were considered as the social media tools where ports in the sample mostly had links in their websites. Although Çalışkan and Esmer (2018: 65) indicated that LinkedIn was preferred mostly by Turkish container ports due to the opportunities of reaching industrial customers through professional platform, only around 31% of ports' websites had links to LinkedIn account. Ports had same percentage of Facebook and Twitter links in their websites (38.5%). One of the attributes in Location dimension was about "interaction among users". No port had such section or link in their websites. There was a one-way communication where the customers sign in to the customer portal and conduct their activities such as container tracking, warehouse arrangements etc. Since websites act as highly successful tools for achieving brand image and recognition (Andersen, 2005: 296), the interaction between the users regarding the services, any positive or negative experiences or idea generation may help the port management to strengthen the brand loyalty and image.

Table 5: Findings for Location Dimension

Attributes in Location Dimension	Average of Attribute Values	% of each level	
Intuitive domain name	0,85	0:15,4%	1:84,6%
Contact information of site designer	0,27	0:73,1%	1:26,9%
Facebook	0,39	0:61,5%	1:38,5%
Twitter	0,39	0:61,5%	1:38,5%
LinkedIn	0,31	0:69,2%	1:30,8%
Instagram	0,19	0:80,8%	1:19,2%
Youtube	0,15	0:84,6%	1:15,4%
Google Plus	0,08	0:92,3%	1:7,7%

Service: Table 6 lists the eleven attributes of "Service" dimension including the average and the percentage of categories. As shown in Table 6, percentages regarding the weather forecast (11.5% for exist), navigational support (7.6% for exist but not active and exist) and maps (57.7% for exist but not active) of the ports were low within the sample of Turkish container ports. Since these attributes are important for ships to arrive and berth at the port area, more navigational perspective is needed to be incorporated into the websites. The main reason behind such low percentages could be due to the fact that ships calling at such ports may utilize weather forecast websites specific for commercial ships, weather routing services and their own radio equipment. Hence, ports may not be prone to integrate and update such weather forecasts, navigational imformation or updated maps to their websites. Half of the sample in the study had section on news/announcements. However, around 81% of ports did not have any structured newsletter section where the website users can access and read about the latest news, developments about the port. In case of e-mail presence, while 53.8% of ports ports preferred to present only one e-mail for contact, 42.3% provided more than one e-mail. These e-mails were basically specific for different departments of the ports such as marketing, operations, finance, customer relations etc. FAQ section was available only in 5 websites. This could be due to the reason that ports preferred to present the related information in the appropriate sections or links rather than inserting a specific section on frequently asked questions.

Table 6: Findings for Service Dimension

Attributes in Service Dimension	Average of Attribute Values	% of each level		
Weather forecast	0,35	0:76,9%	1:11,5%	2:11,5%
Navigational support	0,11	0:92,4%	1:3,8%	2:3,8%
Online customer portal	1,5	0:23,1%	1:3,8%	2:73,1%
Maps	0,81	0:30,8%	1:57,7%	2:11,5%
News/announcements	1,08	0:42,3%	1:7,7%	2:50%
E-mail	1,38	0:3,8%	1:53,8%	2:42,3%
Newsletter	0,35	0:80,8%	1:3,8%	2:15,4%
FAQs	0,38	0:80,8%	1:0%	2:19,2%
Human resources/employment opportunities	1,19	0:26,9%	1:26,9%	2:46,2%
Customer satisfaction questionnaire	0,31	0:84,6%	1:0%	2:15,4%
Online guest book/comment form	1,08	0:46,2%	1:0%	2:53,8%

Human resources and employment opportunities were widely available in websites and only 26.9% of ports did not have any human resource section and application forms on their website. It was seen that many ports considered their websites as a recruitment platform. While 46.2% of ports relied on their own application forms for human resources, 26.9% preferred to direct the applicants to an external site or link for job application. In case of customer satisfaction, it was observed that ports did not prefer to provide a customer satisfaction questionnaire in order to measure the satisfaction levels. This could be due to the reason that ports preferred to measure their customer satisfaction and service quality through the use of other methods including customer visits, making phone calls to customers and asking their participation for making comments on their experiences, sending questionnaires to customers rather than inserting an online questionnaire from on the website etc. However as Peters (2001:23) purported, personal contact such as visits to customers constituted the bulk of the budget for seaports. Hence ports may consider uploading customer satisfaction surveys to their websites. It should also be considered that some ports can also provide dry bulk, project cargo or RO-RO handling services to their customers and it would be difficult to separate the customers of container business with other segments. Therefore, another solution could be integration of such satisfaction surveys to online customer portals.

Maintenance: Maintenance dimension basically deals with site last update date, loading problems, broken links, errors in pictures and texts. A specific indicator showing last update date was available only in 5 ports' websites out of 26 ports. No port provided any information on site counter.

Table 7: Findings for Maintenance Dimension

Sub-Indicator	Average of Attribute Values	% of each level	
Site last update date	0.19	0:80.8%	1:19.2%
Loading problem of pages	0.77	0:23.1%	1:76.9%
Broken link	0.73	0:26.9%	1:73.1%
"Under construction" pages	0.92	0:7.7%	1:92.3%
Correctness of the text	0,89	0:11.5%	1:88.5%
Errors in hypertexts/icons/buttons	0,96	0:3,9%	1:96,1%
Errors in pictures/animations	0,96	0:3,9%	1:96,1%

On the other hand, other maintenance attributes of container ports were considered high based on loading problems, broken links, under construction pages or errors in texts and pictures as seen in Table 7. In case of high performance of such websites in terms of no errors in hypertexts or pictures/animations, it could be concluded that port management and the web designer company paid attention to the elimination of such errors. However, a similar concern was not observed in "site last update date" link.

Usability: This dimension includes twelve attributes. No "skip intro" link was observed in the ports' websites. In addition, all websites had "vertical and horizontal scrolling" option. As seen in Table 8, more than half of the ports had their mobile version of the websites. This was checked separately for each port by entering the ports' website addresses. Search engine was available only in 38.5% of the websites. Table of contents existed in 65.4% of websites. With regards to language options, ports mainly preferred to provide bilingual websites as Turkish and English. Only Yılport Gebze, Hopaport and Samsunport had more than two language options. Since Hopaport and Samsunport are located in Black Sea coast and they have lines and shipments for Russian ports, they prefer to include Russian as the third language option. "Return to homepage and back to the top of the page" link was available in only limited number of websites. This was also same for "go to the next and previous page" link. Such attributes are generally considered helpful for the website visitors to go through the pages in an easier way affecting the usability of the website. Hence ports should pay more attention to such usability attributes in order to improve the communication quality. Another interesting finding was about the labels of photos. Ports' main strength originates from the characteristics of infrastructure and superstructure. Although majority of the ports in the sample provided photos regarding the general view, infrastructure, superstructure and the handling equipment as seen in Content dimension (see Table 4), it was observed that such photos did not include any labels expressing what each photo actually presented on that website. Especially in case of specific container handling equipment and storage facilities for special containers (e.g.reefer containers), customers may be curious about the condition of the equipment and a specific photo with a proper label may help to provide sufficient information to the customer. In addition, customers may not only be the users of ports' websites, but also students, newly graduates, scholars, people interested in ports, media may also visit the ports' websites for various purposes. This was supported by Cahoon (2007: 153) and he dictated that ports mainly focused on the actual needs of their users in their websites by ignoring the potential for positive public relations.

Although there are mostly sections for infrastructure, superstructure etc. within the content of websites, photos with labels may provide enriched information especially for users searching for specific information.

Table 8: Findings for Usability Dimension

Sub-Indicator	Average of Attribute Values	% of each level		
Mobile version	1,15	0:42,3%	1:0%	2:57,7%
Search engine	0,77	0:61,5%	1:0%	2:38,5%
Site map / table of contents	1,46	0:19,2%	1:15,4%	2:65,4%
Language options	1,0	0:11,5%	1:77%	2:11,5%
Return to home page link Back to the top of the page link	0,77	0:61,5%	1:0%	2:38,5%
Go to next or previous page link	0,23	0:88,5%	1:0%	2:11,5%
Navigation bar in home page	1,85	0:7,7%	1:0%	2:92,3%
Labels of photos	0,08	0:96,1%	1: 0%	2:3,9%
Title of pages	1,73	0:7,7%	1:11,5%	2:80,8%
Navigation bar in page bottom	1,08	0:46,2%	1:0%	2:53,8%

Feasibility: This dimension basically focuses on page hierarchy, resolution/browser information, photo/flash animations, privacy and security statement, download section and printing and saving options of pages. All the ports in the sample had options for saving and printing of the pages. Consistent page hierarchy was checked by observing the links from main page to the lower sections. As seen in Table 9, such consistency was observed in majority of the websites. This was also same for photo and flash animations. While 76.9% of the websites had no privacy and security statement, 23.1% had such section on their websites. With regards to download section, 46.2 % of the ports did not allocate a specific section for download options.

Table 9: Findings for Feasibility Dimension

Sub-Indicator	Average of Attribute Values	% of each level	
Page hierarchy	0,85	0:15,4%	1:84,6%
Photo, flash animations etc.	0,81	0:19,2%	1:80,8%
Privacy and security statement	0,23	0:76,9%	1:23,1%
Download section	0,46	0:53,8%	1:46,2%

Following the evaluation of each dimension in the model, final score for each port for each dimension and the final overall score are presented in Table 10. The overall average score for 26 websites was 50.2% signalling moderate quality. The ports shown in Table 10 were ranked according to their overall scores (overall evaluation). Within 26 ports, top ten container ports with highest container handling volumes are Marport, MIP (Mersin), Kumport, Asyaport, Izmir Alsancak, Yılport-Gebze, Gemport, DPWorld Yarımca, Evyap and Mardaş (see Table 2). When the overall scores in terms of website communication quality were considered, it was seen that most of the ports in listed in top ten container ports were also ranked high in Table 10. These ports are Mersin (MIP), Evyap, Kumport, Marport, Asyaport, DPWorld Yarımca and Yılport-Gebze. This showed that there is a similar pattern with regards to the handling volumes of the ports and the website communication quality. Only Izmir Alsancak, Gemport and Mardaş were relatively ranked lower in Table 10. Scores for Identity dimension of these ports (especially for Kumport and Asyaport and Gemport-50%, Yılport and Mardaş-75%) were noted same. Private ports scored considerably better than commercialized and public ports in terms of general evaluation. Two public ports (Izmir Alsancak and Haydarpaşa) achieved the lowest scores in the evaluation. These ports' websites were classified under Turkish State Railways' main website and only a single webpage was dedicated to these ports. Therefore, Haydarpaşa and Izmir Alsancak ports achieved the same score due to the standard structure of Turkish State Railways' main website. It was not surprising to notice that the scores of private ports and commercialized ports were much higher than the public ports. Since private ports mainly relied on the investments, increasing their handling volumes as well as their market share, more attention could be given to the website quality. When the website communication quality ranking of top ten container ports in Turkey was considered, scores for Content dimension were noted close to each other with the exception of Yılport-Gebze, Mardaş and Izmir Alsancak ports (mainly below 40%). In case of Identity dimension, while Mersin MIP, Yılport-Gebze, Gemport and Mardaş achieved scores more than 70%, Evyap, Kumport, Asyaport, Borusan, DPWorld and Izmir Alsancak achieved relatively lower scores showing that they need to provide more information to their website users regarding their corporate structure, mission and vision, historical background regarding the port etc.

Table 10: Overall Score for the Container Ports According to Dimensions (%)

Port	Identity	Content	Location	Service	Maintenance	Usability	Feasibility	Overall Evaluation
Mersin MIP	**83.3**	51.9	12.5	**68.2**	**100.0**	**75.0**	**75.0**	66.6
Evyap	66.7	48.1	62.5	59.1	85.7	45.0	**75.0**	63.1
Samsun	50.0	32.7	**87.5**	36.4	85.7	70.0	**75.0**	62.5
Kumport	50.0	55.8	50	59.1	85.7	60.0	**75.0**	62.2
Marport	75.0	50.0	37.5	59.1	**100.0**	35.0	**75.0**	61.7
Asyaport	50.0	40.4	75	63.6	85.7	65.0	50.0	61.4
DPWorld	33.3	42.3	62.5	50.0	85.7	**75.0**	**75.0**	60.6
Limak	66.7	51.9	50	59.1	85.7	50.0	50.0	59.1
Rodaport	66.7	46.2	12.5	40.9	85.7	85.0	**75.0**	58.8
Hopaport	58.3	40.4	62.5	36.4	85.7	50.0	**75.0**	58.3
Yılport-Gebze	75.0	36.5	62.5	27.3	85.7	60.0	50.0	56.7
Assan	75.0	48.1	37.5	50.0	85.7	45.0	50.0	55.9
Bandırma-Çelebi	75.0	48.1	25	45.5	85.7	**75.0**	25.0	54.2
Gemport	75.0	53.8	12.5	36.4	71.4	60.0	50.0	51.3
Borusan	41.7	**65.4**	25	36.4	85.7	55.0	50.0	51.3
Mardaş	75.0	38.5	12.5	45.5	71.4	55.0	50.0	49.7
APM (Izmir)	41.7	38.5	12.5	27.3	85.7	65.0	**75.0**	49.4
Port Akdeniz	41.7	25.0	50	27.3	85.7	35.0	**75.0**	48.5
Limaş	33.3	11.5	25	36.4	71.4	65.0	50.0	41.8
Alport	50.0	30.8	12.5	36.4	42.9	45.0	**75.0**	41.8
Nemport	33.3	36.5	12.5	22.7	85.7	35.0	50.0	39.4
TCEEGE	25.0	32.7	25	40.9	28.6	40.0	50.0	34.6
Çanakkale	41.7	23.1	12.5	13.6	71.4	25.0	50.0	33.9
Akçansa	66.7	32.7	12.5	22.7	0.0	35.0	25.0	27.8
Haydarpaşa	25.0	19.2	0	4.5	85.7	5.0	50.0	27.1
Izmir Alsancak	25.0	19.2	0	4.5	85.7	5.0	50.0	27.1
Overall score	53.8	39.2	32.7	38.8	77.5	50.6	58.7	50.2

Source: Author's elaboration

The scores for Location dimension for top ten container ports in Turkey were lower compared to Identity and Content dimensions. While Asyaport (75%) achieved the highest rank within 10 ports, it was followed by Evyap, DPWorld and Yılport Gebze (62.5%). It was notable that scores for Mersin MIP, Gemport and Borusan were low compared to other ports (12.5%). It was surprising that ports in proximity achieved the same score for Location dimension (Evyap, DPWorld and Yılport-Gebze). Since Location dimension mainly consisted of links to social media accounts, it could be concluded that such ports with lower scores in Location dimension did not insert such links to direct the website users to their social media accounts. Mersin (MIP) received the highest score within 26 container ports. It also ranked second in terms of handling volume in Turkey. Although Samsun port was not included in top ten ranking in terms of handling volume, it ranked third in the evaluation. Scores of Samsun port especially in case of Location, Maintenance, Usability and Feasibility were considered high within the sample. Identity, Service, Maintenance, Usability and Feasibility scores of Mersin Port were high compared to other private ports.When top ten ports in container handling volume (Table 2) and top ten highly scored ports (Table 10) were compared, it was observed that 4 ports (Mersin, Kumport, Asyaport and DPWorld Yarımca) out of 10 were operated by foreign terminal operating companies as Cosco Pacific, DPWorld, GTL and PSA. Since there were six container ports in total (Mersin, Kumport, Asyaport, DPWorld Yarımca, TCEEGE, APM) operated by foreign terminal operating companies in the sample of the study, it could be concluded that four container ports out of six (ones operated by foreign terminal operators) received high scores in the evaluation. This could be explained by the expertise and know-how of the terminal operating companies in port and terminal management. Olivier (2005) dictated that know-how and information technology-related experience could be considered as the differentiation factors as well as the factors for determining the competitive advantage of the terminal operating companies. Since these terminal operators operate various terminals in different regions of the world, they may gain the ability to communicate with the customers and other stakeholders through various communication channels. Experience and know-how gained through such diversification with regards to different regions and countries together with the competitive marketing strategies may lead to higher scores in website communication quality. Among the seven dimensions in the model, Maintenance (100% for Mersin and Marport), Identity (83.3% for Mersin), Location (87.5% for Samsun) and Feasibility had the highest score while more problematic dimensions seemed as Content (39.2%), Service (38.8%) and Location (32.7%). When the ports were evaluated with regards to the regions in Turkey, it was seen that especially private ports located close to each other in case of Aegean region (APM, Nemport and TCEEGE) received close scores (49.4%, 39.4% and 34.6% respectively). The only exception was Izmir Alsancak port (27.1%) and this could be due to the public management characteristics of the port. While APM (Izmir)'s score was high in terms of Maintenance (85.7%) and Feasibility (75%) dimensions, Nemport's score was 85.7% in Maintenance. As close ports, Marport, Mardaş, Akçansa and Kumport were located in Ambarlı region. Within these four ports, Kumport and Marport achieved close scores (62.2% and 61.7% respectively). However, scores for Mardaş and Akçansa were not considered close (49.7% and 27.8% respectively). In case of competition, it was observed that scores for 4 ports located in the same location (Ambarlı) were not considered same. Since websites are mainly considered critical for presentation of the businesses and services to a very large audience, especially ports located close to each other should consider to improve the website communication quality. Another cluster of ports located close to each other were; Rodaport, Gemport, Borusan and Bandırma-Çelebi port. It was seen that Bandırma-Çelebi, Gemport and Borusan achieved very close scores (54.2%, 51.3% and 51.3% respectively), while Rodaport was ranked higher than the others

(58.8%). In such case, it could be concluded that ports in Bursa region, had similar website communication quality by paying attention specifically to Content, Maintenance, Usability and Feasibility. When the overall scores of the ports in the sample were considered, Content, Location and Service dimensions were considered low compared to Maintenance and Identity dimensions. Maintenance scores for most ports were high since there were almost no negative features noted in the content analysis. Following maintenance dimension, the second highest overall score belonged to Feasibility dimension. This could be explained by the fact that in case of page hierarchy, photo/flash animations, printing and saving of pages attributes, most ports achieved high scores (mainly more than 50%).

Conclusion

Development of container shipping since the invention of containers along with intermodalism triggered the introduction of "container ports" to the shipping and logistics industry. Container ports are situated as the critical nodes in the supply chains of many commodities and they also add value to the shippers' and container shipping lines' logistics processes. It is evident that there is fierce competition among container ports in regional, national and international levels. Container ports involved in B2B markets are required to pay close attention to their marketing communication strategies by utilizing the critical tools for enhancing their interactions with many actors. Among such tools, websites are considered to provide large amount of information regarding the port itself and the marketing department of the port can communicate directly with the possible and existing customers to provide more information compared to other medium (Keller, 2009: 150). Moreover, websites can be viewed as critical marketing tools for providing information to existing and potential customers as well as the community regarding their services, infrastructure and superstructure. Main aim of this research was to identify the characteristics of Turkish container ports' websites through the investigation of main dimensions proposed by Mich et al. (2003). There were two research questions investigating (1) the characteristics of Turkish ports' websites in terms of website communication quality and (2) the existence of prominent dimensions and attributes in Turkish container ports with high handling volumes. 2QCV3Q model adapted to container port industry was employed to understand the characteristics of Turkish container ports' websites in the scope of marketing communication. As Cahoon (2007: 152) dictated, marketing strategies especially from marketing communication perspective represented an under-researched field in port-related literature. Building upon Cahoon's (2007) argument, it can still be concluded that more studies are needed in this field especially by focusing on the content of the websites and social media accounts of seaports.

Identity dimension scores for top ten container ports with high handling volumes were considered relatively high. While Mersin Port (83.3%), received the highest score within this dimension, Marport, Yılport, Gebze, Gemport and Mardaş received 75%. As the only public port in the list of top ten container ports, Izmir Alsancak port's score was considerably lower (25%). Within Identity dimension, mission and vision statements were reviewed for each port within the sample of the study. It was seen that nearly half of the ports did not provide section regarding mission and vision statements. This was supported by the findings of Ateş (2016: 411) that only 35 ports out of 62 ports in Turkey having websites had section for mission and vision statements. Content dimension is a critical one dealing mainly with what is inside the website regarding the port. This dimension can also be considered as the main picture of the port including variety of information and photos on infrastructure, superstructure, handling equipment, handling statistics, main customers, innovation and sustainability related information etc. The score for Content dimension was relatively low (39.2%) within the overall evaluation. Compared to the other dimensions, Content can generally be viewed as the most important dimension where the users of the port websites will directly search and read. In case of top ten container ports in Turkey, it was found that ports had almost similar scores within this dimension. Following Borusan port (65.4%), Kumport, Gemport and Mersin received scores of 55.8%, 53.8%, 51.9% respectively. The findings showed that there was a similarity in the content of websites of such ports, which might identify either a lack of originality or a common attempt to achieve similar contents of websites by utilizing common themes for benchmarking purposes. More than half of the sample (57.7%) did not have any links to other relevant websites and 11.5% of the companies' links were broken in their websites. When there are well-structured links in the website, users may become more interested in the website and it may reduce the risk of navigation away from the website. Improved content structure may result in increased focus on the textual content of the webpages.

It was observed that container ports' websites were more prone to provide information regarding specific issues such as services provided to ships and cargoes, handling equipment, contact details, certificates etc. Considering the informative characteristics of the websites, it could be concluded that the ports in the sample mainly concentrated on the functional orientation (Kerin et al.2015) where the main focus was on the presentation of ports' services, handling equipment, related maps etc. However, it was observed that experiential function where visuality and esthetic issues as well as involvement of the user came into play (Kerin et al. 2015) was neglected in most of the ports. Ports' websites had more informative structure rather than establishing relationships with the users. It was seen that no port had such interaction among users section. It could be argued that such role of websites was replaced by various social media tools such as Facebook, Twitter, LinkedIn, Youtube etc. Although the content and the philosophy of the websites and the social media tools have different characteristics, common points can be found so that interaction between the websites and the social media tools can be achieved. The findings of the study showed that majority of ports in the sample did not link their social media accounts to their websites and around 30% of the ports had links to Facebook, Twitter and Instagram. In case of top ten container ports, it was observed that most ports' achieved relatively high scores in terms of location dimension. The findings of the study showed that there were three components where the users of websites can communicate with the port business. These were online customer portals, customer satisfaction questionnaires and online guest books or comment forms.

In case of Service dimension, top ten container ports with high handling volumes relatively achieved low scores. As seen in Appendix 1, Service dimension includes attributes regarding the users' ease of use and functionality regarding the website. Although majority of the ports had online customer portals, the percentages regarding the presence of interactive

and updated maps, navigational support, updated weather forecasts news/announcements, newsletters were low. Half of the ports in the sample provided an e-mail of only one contact on their websites which mainly limited the opportunity to reach more employees by e-mails. Peters (2001:23) argued that seaports can be considered as "people business" and personal contact should be considered as the main component of marketing strategies of seaports. Building upon this argument, it could be mentioned that Turkish container ports need to give more importance to the customization component on their websites by providing contact details for relevant people rather than a general e-mail. In addition, more information-related material should be available to the website users including newsletters, latest news from the port and the industry, navigational issues, weather updates etc. This could be perceived as a valuable contribution by the users that they could easily access the latest news about the port and the industry.

With regards to Maintenance, Usability and Feasibility, especially scores of top ten container ports in the sample did not considerably differ. In case of general evaluation, it could be concluded that container ports in the sample had relatively differences in case of Identity, Content, Location and Service dimensions. This was also supported in the findings of Kamanlıoğlu and Emiroğlu (2009: 69) that distinctive differences were not observed in accessibity and maintenance dimensions in their sample of fishery industry. Usability can be considered as a very critical dimension helping the website user to navigate through the website in a comfortable manner and traditional website components including site map, search facility, navigation bar should be available in the websites to facilitate the navigation. Findings showed that while search engine was absent in majority of the ports in the sample, site map and navigation bar were mostly available.

When the overall scores for twenty-six container ports were considered, Location (32.7%), Service (38.8%) and Content (39.2%) dimensions received the lowest scores. Maintenance was the only dimension which the overall score was more than 75%. This was followed by Feasibility, Identity and Usability. When Service and Content dimensions were considered specifically, it could be argued that the container ports did not pay sufficient attention to the context of their websites as well as the facilitation of users' navigation through their websites. This was also supported by the recent study by Benevolo and Spinelli (2018: 239) concentrating on marinas in northern Italy. Low scores in both dimensions pointed out the main weaknesses of ports in the sample of the study. Such weakness is critical in case of container port industry since the services offered by the ports together with the related infrastructure and superstructure play an important role in the service quality of the ports. Container shipping lines, shippers, freight forwarders as the main customers of container ports need to be provided sufficient information regarding any topic that interest them. This could be handling statistics, latest news about the port, handling capacity and performance of the cranes available at the port area, warehousing facilities, and dedicated areas for special containers, railway connections or links to the logistics centers in proximity etc. Lack of information regarding these topics as well as other issues discussed in various dimensions can discourage visitors of websites from accessing the website and switch to other websites regarding their topics of interest.

Implications, Limitations and Further Research

Although various applications of the original model proposed by Mich et al. (2003: 35) for some industries have been present in the literature, a specific method modified for container ports was not employed and studied. Hence, this study proposes an adapted version of the original 2QCV3Q model. The model explained in this study provides notable implications for practitioners, especially port marketing managers and executives involved in the decision-making processes of port management. This study proposes a structured approach and method for the evaluation of web-based communication for container port industry. As Rondović et al. (2017: 422) asserted, a proper evaluation of website quality can be established through the use of the appropriate method and correct actions can be taken in order to improve the website quality. Port marketing managers can benefit from such method in order to assess their website communication quality through the indepth analysis of the main dimensions and the related attributes. Both weaknesses and strengths for each attribute can be evaluated and corrective measures for the attributes with low scores may be taken in order to improve the communication quality. Since the application of the method can be repeated in certain intervals depending on the ports' requirements, container ports can easily compare the before and after results. This provides opportunities for ports to improve the necessary attributes on their websites. Apart from ports' own evaluation of their websites, competitors' websites can also be studied in order to compare their own scores with their rivals. The model also allows the participation of many actors involved in the port business. Container port businesses as site owners as well as the website design companies can use this model for the evaluation of any dimension(s) specific for their ports. Collaborative efforts can also be applied where the port business, users of the port's website which may be mainly the customers, students, professionals, scholars etc. as well as marketers/consultants come together and conduct separate evaluations by reflecting their own perspectives. Port businesses can possibly gain considerable outcome based on the findings of such collaborative studies and projects. Another suggestion for port marketing managers and executives can be made with regards to the differentiation in the content of their websites. There were a limited number of reports available in the sample of the websites studied. Container ports should focus more on the disclosure concept by not only limiting themselves to certain issues as operational performance and infrastructure and superstructure, but also by considering three pillars of sustainability (economic, social and environmental) on their websites in the form of annual or quarterly reports. Another content-related suggestion would be on the consideration of general public in order to attract their attention and increase awareness regarding the port. This could be achieved by inserting educational materials segmented for different age groups (e.g. for children, young people, elder people etc.) as well as entertaining games where the website visitors may feel themselves more connected to the port itself. The findings showed that majority of ports did not provide any information about the container port industry or issues related to container port industry as well as the useful and easy rich links. This could be considered as another topic of concern for the practitioners that ports' websites could be transformed into a source of information for many website users to reach valuable information about the container port industry. Additional employees dedicated for collecting the up-to-date industry related information could be hired by the ports to enrich their contents. Since website components can be considered as potential signs of powerful relationships between the ports and their

customers leading to satisfaction and loyalty, practitioners focusing on marketing communications should critically analyze the strengths and weaknesses of their websites to provide high-quality website services.

This study focused on Turkish container port industry and findings cannot be transferable to other types of ports including dry and liquid bulk ports, cruise ports or RO-RO ports. Some attributes, which could be used in the evaluation form, were not considered due to their potential for subjectivity. These attributes can be considered from the perspective of aesthetics of the website, color, image and sound-related attributes, speed and design. The data utilized in the study is categorical in nature and the sample is limited to 26 container ports, some statistical methods including regression, confirmatory factor analysis (CFA), analysis of variance (ANOVA) or cluster analysis were not employed. This study only focused on the websites of container ports in Turkey and their social media accounts were considered out of scope. Hence, some attributes and content which were not available in the websites of ports could be present in their social media accounts. For instance, while there was no statement regarding Industry 4.0 applications of ports in their websites and there was very limited information on hinterland connections and multimodal transport opportunities of ports in the current evaluation, more and detailed information can be available in the social media accounts of such ports.

The study was basically structured on 2QCV3Q through modifications made for container port industry. Additional dimensions and attributes as well as different attributes for existing dimensions can be included in the further research. A web communication quality study can also be conducted with other port types (e.g.dry bulk ports) and similarities and differences between container ports and such ports can be investigated. Longitudional and comparative studies can also be conducted in order to observe the changes taking place in the website quality. Since websites are dynamic in nature and change over time, it would be interesting to compare the scores and contents of port websites by considering changes in the periods. Website communication quality of Turkish container ports can also be compared with the container ports in Europe or other regions of the world. Hence, strengths as well as areas to be improved in Turkish container websites can be elaborated. There are many studies on website quality focusing on user perspective. User perspective is widely investigated in B2C markets and similarly, evaluations of users in B2B environments can provide considerable insight for the improvement of website quality. Although it would be complex and time consuming to collect the views of all users of all container ports' websites in Turkey, a limited number of ports or a single port can be selected for the analysis of user's perspectives or only customer perspective by focusing on the shippers' or freight forwarders' views can be collected. In addition to users, selected stakeholders' and employees' internal evaluation may be promising for future research. Last suggestion for further research can be made about searching ways to gather information from site users and conducting analysis based on the information gathered. Qualitative approach can be employed and observation, indepth interviews and focus groups may provide considerable data for website developers and the businesses. Quantitative approach including surveys, experimental designs and website tracking analytics may also present valuable data from user perspective to be evaluated in the development of websites.

References

Agarwal, R., Venkatesh, V. (2002). Assessing A Firm's Web Presence: A Heuristic Evaluation Procedure for the Measurement of Usability. *Information Systems Research,* 13 (2),168–186, https://doi.org/10.1287/isre.13.2.168.84

Aladwani A.M., Palvia, P.C. (2002). Developing and Validating an Instrument for Measuring User-Perceived Web Quality. *Information & Management*, 39, 467–476, https://doi.org/10.1016/S0378-7206(01)00113-6

Al-Mouh, N., Al-Khalifa, H. S. (2016). Enhancing Web Accessibility by Implementing Context Aware Proxy. *International Journal of Web Information Systems*, 12(2), 201-214, https://doi.org/10.1108/IJWIS-11-2015-0037

Andersen, P.H. (2005). Relationship Marketing and Brand Involvement of Professionals through Web-enhanced Brand Communities: The case of Coloplast. *Industrial Marketing Management,* 34(3), 285-297.

Ateş, A. (2016). Türkiye'deki Limanların İnternet Sitelerinde Yer Alan Misyon ve Vizyon Beyanlarının Verimlilik Odaklı İçerik Analizi. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi,* 13 (34), 401-415.

Bai, B., Law, R., Wen, I. (2008). The Impact of Website Quality on Customer Satisfaction and Purchase Intentions: Evidence from Chinese Online Visitors. *International Journal of Hospitality Management*, 27(3), 391-402, https://doi.org/10.1016/j.ijhm.2007.10.008

Barnes, S.J., Vidgen, R.(2003). Measuring Website Quality Improvements: A Case Study of the Forum on Strategic Management Knowledge Exchange. *Industrial Management and Data Systems,* 103(5), 297–309, https://doi.org/10.1108/02635570310477352

Benevolo, C., Spinelli, R. (2018). Evaluating the Quality of Web Communication in Nautical Tourism: A Suggested Approach. *Tourism and Hospitality Research*, 18(2), 229-241, https://doi.org/10.1177/1467358416643624

Brooks, M. R., Schellinck, T. (2015). Measuring Port Effectiveness: What Really Determines Cargo Interests' Evaluations of Port Service Delivery?. *Maritime Policy & Management*, 42(7),699-711, https://doi.org/ 10.1080/03088839.2015.1077282

Burmaoglu, S., Kazancoglu, Y. (2012). E-Government Website Evaluation with Hybrid MCDM Method in Fuzzy Environment. *International Journal of Applied Decision Sciences*, *5*(2), 163-181, https://doi.org/10.1504/IJADS.2012.046504

Cahoon, S. (2007). Marketing Communications for Seaports: A Matter of Survival and Growth. *Maritime Policy & Management,* 34(2),151-168, https://doi.org/10.1080/03088830701240342

Candemir, A. Zalluhoğlu, A.E., Karslı, C. (2015). Türkiye Marinalarının Websitelerinin SERVQUAL Ölçeği ile Değerlendirilmesi. II. Ulusal Liman Kongresi, Izmir, Türkiye.

Carlos, V.S., Rodrigues, R.G. (2012).Website Quality Evaluation in Higher Education Institutions. *Procedia Technology*, 5, 273-282.

Chakraborty, G. Lala, V. and Warren, D. (2002). An Empirical Investigation of Antecedent of B2B Websites' Effectiveness. *Journal of Interactive Marketing,* 16 (4), 51-72.

Cheung, W.M., Huang, W.(2002). An Investigation of Commercial Usage of The World Wide Web: A Picture From Singapore. *International*

Journal of Information Management, 22(5), 377–388, https://doi.org/10.1016/S0268-4012(02)00026-9

Chiou, W., Lin, C. and Perng, C. (2010). A Strategic Framework for Website Evaluation Based on a Review of the Literature from 1995–2006. *Information & Management*, 47, 282– 290.

Chung, T., Law, R. (2003). Developing a Performance Indicator For Hotel Websites. *International Journal of Hospitality Management*, 22(1), 119-125, doi:10.1016/S0278- 4319(02)00076-2

Connolly-Ahern, C., Broadway, S. C. (2007). The Importance of Appearing Competent: An analysis of Corporate Impression Management Strategies on the World Wide Web. *Public Relations Review*, 33, 343–345.

Cox, J., Dale, B. G. (2002). Key Quality Factors in Website Design and Use: An Examination. *International Journal of Quality & Reliability Management*, 19(7), 862–888, https://doi.org/10.1108/02656710210434784

Cronin, J. J. (2003). Looking Back to See Forward in Services Marketing: Some Ideas to Consider. *Managing Service Quality: An International Journal*, 13 (5): 332–337, https://doi.org/10.1108/09604520310495813

Çalışkan, A., Esmer, S. (2018). Social Media Usage Patterns in Port Industry: Implications for Port Promotion and Public Relations. *Journal of ETA Maritime Science*, 6(1), 61-74, https://doi.org/10.5505/jems.2018.82905

Çavuşoğlu, D., Denktaş Şakar, G. (2013). İntermodal Limanlar ve Pazarlama İletişimi: Liman Web Sitelerinin İçerik Analizi. *Dokuz Eylül Üniversitesi Denizcilik Fakültesi Dergisi*, 5 (2), 37-55.

Çebi, S. (2013). Determining Importance Degrees of Website Design Parameters Based on Interactions and Types of Websites. *Decision Support Systems,* 54, 1030– 1043.

Davidavičienė, V., Tolvaišas, J. (2011). Measuring Quality of E-Commerce Web Sites: Case of Lithuania. *Economics & Management*,16,723-729.

Denktaş Şakar, G., Karataş Çetin, C. (2012). Port Sustainability and Stakeholder Management in Supply Chains: A Framework on Resource Dependence Theory. *The Asian Journal of Shipping and Logistics,* 28(3): 301-320, https://doi.org/10.1016/j.ajsl.2013.01.002

Devaraj, S., Man, F., Kohli, R. (2002). Antecedents of B2C Channel Satisfaction and Preference: Validating E-Commerce Metrics. *Information Systems Research,* 13(3), 316–333, https://doi.org/10.1287/isre.13.3.316.77

Doolin B., Burgess L., Cooper J. (2002). Evaluating the Use of the Web for Tourism Marketing: A Case Study from New Zealand.*Tourism Management*, 23(5): 557–561, https://doi.org/10.1016/S0261-5177(02)00014-6

Drăgulănescu, N-G. (2002). Website Quality Evaluations: Criteria and Tools. *The International Information and Library Review,* 34(3), 247-254.

Evans, J.R., King, V.E. (1999). Business-to-Business Marketing and the World Wide Web: Planning, Managing and Assessing Websites. *Industrial Marketing Management*, 28(4), 343–358, https://doi.org/10.1016/S0019-8501(98)00013-3

Esmer, S., Duru, O. (2017). Port Governance in Turkey: The Age of the Global Terminal Operators. *Research in Transportation Business & Management*, 22:214-223, https://doi.org/10.1016/j.rtbm.2016.12.001

Faba-Perez, C., Guerrero-Bote, V. P., De Moya-Anegon, F. (2005). Self-Organizing Maps of Web Spaces Based on Formal Characteristics. *Information Processing and Management*, 41(2), 331–346, https://doi.org/10.1016/j.ipm.2003.10.007

Heldal, F., Sjovold, E., Heldal, A. F. (2004). Success on The Internet – Optimizing Relationships Through the Corporate Site. *International Journal of Information Management*, 24(2), 115–129, https://doi.org/10.1016/j.ijinfomgt.2003.12.010

Huang, Z., Cappel, J. J. (2012). A Comparative Study of Web Site Usability Practices of Fortune 500 Versus INC. 500 Companies. *Information Systems Management*, 29(2), 112-122, https://doi.org /10.1080/10580530.2012.661633

Hung, W., McQueen, R.J. (2004). Developing an Instrument for E-Commerce. Websites From the First-Time Buyer's Viewpoint. *Electronic Journal of Information Systems Evaluation*, 7(1): 31-42.

Kamanlioglu, E., Emiroglu, D. İ. (2009). Qualitative Evaluation of Web Sites of Firms in Turkish Fishery Sector. *Ege Üniversitesi Su Ürünleri Dergisi*, 26(1), 65-72.

Kavindra, K., Praveen, K. (2014). A New Model for Website Quality Evaluation: A Practical Approach. *International Journal of Research in Engineering &Technology.*

Keller, K.L. (2009). Building Strong Brands in a Modern Marketing Communication Environment. *Journal of Marketing Communications,* 15 (2–3), 139–55.

Kerin, R.A, Hartley S.W, Rudelius, W. (2015). *Marketing.* NewYork: McGraw-Hill Education

Kesici, E , Nazlı, M , Turhan, G . (2017). Firma Konumlandırma Stratejisinin Web Sitesi İçeriği ile Uyumluluğu: Türkiye'de En Yüksek Ar&Ge Harcaması Yapan Firmalar. *Gaziantep University Journal of Social Sciences* , 16(3), 664-686.

Kiani, G.R. (1998). Marketing Opportunities in the Digital World. *Internet Research,* 8(2),185-194, https://doi.org/10.1108/10662249810211656

Kim, S., Stoel, L. (2004). Apparel Retailers: Website Quality Dimensions and Satisfaction. *Journal of Retailing and Consumer Services,* 11(2), 109–117. http://dx.doi.org/10.1016/S0969-6989(03)00010-9

Klaus, P., Nguyen, B. (2013). Exploring the Role of the Online Customer Experience in Firms' Multi-Channel Strategy: An Empirical Analysis of the Retail Banking Services Sector. *Journal of Strategic Marketing*, 21(5), 429-442, https://doi.org/10.1080/0965254X.2013.801610

Koufaris, M.(2002). Applying the Technology Acceptance Model and Flow Theory to Online Consumer Behavior. *Information Systems Research,* 13(2), 205–223, URL:https://www.jstor.org/stable/23011056

Kumar, N., Dadhich, R., Shastri, A. (2015). Quality Models for Web-based Application: A Comparative Study. *International Journal of Computer Applications*, 125(2),25-32, https://doi.org/10.5120/ijca2015905840

Lavie,T., Tractinsky, N. (2004). Assessing Dimensions of Perceived Visual Aesthetics of Web Sites. *International Journal of Human-Computer Studies,* 60(3), 269–298, https://doi.org/10.1016/j.ijhcs.2003.09.002

Law, R., Qi, S.,Buhalis, D. (2010). Progress in Tourism Management: A Review of Website Evaluation in Tourism Research. *Tourism management*, 31(3), 297-313, https://doi.org/10.1016/j.tourman.2009.11.007

Lee, S., Koubek, R.J. (2010). Understanding User Preferences Based on Usability and Aesthetics Before and After Actual Use. *Interacting with Computers,* 22, 530–543. https://doi.org/10.1016/j.intcom.2010.05.002.

Liang, T. P., Lai, H. J. (2002). Effect of Store Design on Consumer Purchases: An Empirical Study of On-Line Bookstores. *Information &*

Management, 39(6), 431–444, https://doi.org/10.1016/S0378-7206(01)00129-X

Lin, J.C.C., Lu, H. (2000). Towards an Understanding of the Behavioural Intention to Use a Website. *International Journal of Information Management,* 20,197–208, https://doi.org/10.1016/S0268-4012(00)00005-0

Liu, C., Arnett, P. K., Capella, M. L., Beatty, C. R. (1997). Web Sites of the Fortune 500 Companies: Facing Customers Through Home Pages. *Information and Management,* 31(6), 335-345, https://doi.org/10.1016/S0378-7206(97)00001-3

Liu, C., Arnett, K. P., Litecky, C. (2000). Design Quality of Websites for Electronic Commerce: Fortune 1000 Webmasters' Evaluations. *Electronic Markets,* 10(2), 120-129,https://doi.org/10.1080/10196780050138173

Loiacono, E. T., Romano Jr., N. C., McCoy, S. (2009). The State of Corporate Website Accessibility. *Communications of the ACM*, 52(9),128-132, https://doi.org 10.1145/1562164.1562197

Lowry, P. B., Vance, A., Moody, G. Beckman, B., Read, A. (2008). Explaining and Predicting the Impact of Branding Alliances and Web Site Quality on Initial Consumer Trust of E-Commerce Web Sites. *Journal of Management Information Systems*, 24(4),199-224, https://doi.org/10.2753/MIS0742-1222240408

Manzari, L., Trinidad-Christensen, J. (2013). User-Centered Design of A Web Site for Library and Information Science Students: Heuristic Evaluation and Usability Testing. *Information Technology and Libraries*, *25*(3), 163-169, https://doi.org/10.6017/ital.v25i3.3348

Maynard, M., Tian, Y. (2004). Between Global and Glocal: Content Analysis of the Chinese Web sites of the 100 Top Global Brands. *Public Relations Review*, 30(3), 285-29.

McCall, J., Richards, P., Walters, G. (1977). *Factors in software quality. volume i. concepts and definitions of software quality*. Technical report, DTIC Document.

Mich, L., Franch, M., Gaio. L. (2003). Evaluating and Designing the Quality of Web Sites. *IEEE Multimedia*, 10(1), 34-43, https://doi.org/10.1109/MMUL.2003.1167920

Murati, M. (2013). The Role of Marketing in Competitive Environment of the Seaports. The 1st International Conference on Research and Education – Challenges Towards the Future (ICRA2013). Albania.

Notteboom, T., Parola, F., Satta, G., Penco, L. (2015). Disclosure as a Tool in Stakeholder Relations Management: A Longitudinal Study on the Port of Rotterdam. *International Journal of Logistics Research and Applications*, 18(3), 228-250, https://doi.org/10.1080/13675567.2015.1027149

Okazaki, S. (2004). Do Multinationals Standardise or Localise? The Cross-Cultural Dimensionality of Product-Based Web Sites. *Internet Research*, 14(1),81-94, https://doi.org/10.1108/10662240410516336

Olivier, D. (2005). Private Entry and Emerging Partnerships in the Container Terminal Industry: Evidence from Asia. *Maritime Economics and Logistics*, 7(2), 87-115, https://doi.org/10.1057/palgrave.mel.9100131

Olson, E.L., Widing, R.E. (2002). Are Interactive Decision Aids Better than Passive Decision Aids? A Comparison with Implications for Information Providers on the Internet. *Journal of Interactive Marketing*, 16(2), 22–33, https://doi.org/10.1002/dir.10007

Palmer J.W.(2002). Website Usability, Design, and Performance Metrics. *Information Systems Research,* 13(2), 151–167, https://doi.org/10.1287/isre.13.2.151.88

Pando J., Araujo, A., Maqueda, F.J. (2005). Marketing Management at the World's Major Ports. *Maritime Policy & Management*, 32(2),67-87, https://doi.org/10.1080/03088830500097414

Park, Y.A., Gretzel, U. (2007). Success Factors for Destination Marketing Web Sites: A Qualitative Meta-Analysis. *Journal of Travel Research*, 46(1),46–63, https://doi.org/10.1177/0047287507302381

Parola, F., Pallis, A.A., Risitano, M., Ferretti, M. (2018). Marketing Strategies for Port Authorities: A Multi-Dimensional Theorization.*Transportation Research Part A*, 111, 199–212.

Parola, F., Satta, G., Penco, L., Profumo, G.(2013). Emerging Port Authority Communication Strategies: Assessing the Determinants of Disclosure in the Annual Report. *Research in Transportation Business & Management,* 8,134–147, https://doi.org/10.1016/j.rtbm.2013.04.005

Peters, H. J. F. (2001). Developments in Global Seatrade and Container Shipping Markets: Their Effects on the Port Industry and Private Sector Involvement. *International Journal of Maritime Economics*, 3(1), 3–26, https://doi.org/10.1057/palgrave.ijm

Pflughoeft, K.A., Ramamurthy, K., Soofi, E.S., Yasai-Ardekani, M. and Zahedi, F. (2003). Multiple Conceptualizations of Small Business Web Use and Benefit. *Decision Sciences*, 34(3), 467–512.

Ranganathan, C., Ganapathy S.(2002). Key Dimensions of Business to- Consumer Websites. *Information & Managemen*t, 39, 457–465, https://doi.org/10.1016/S0378-7206(01)00112-4

Robbins, S.S., Stylianou, A.C. (2003). Global Corporate Websites: An Empirical Investigation of Content and Design. *Information and Management,* 40(3),205– 212, https://doi.org/10.1016/S0378-7206(02)00002-2

Rondović, B. Cerović, J. Duricković, T. Melović, B. (2017). The Importance of Observing the Difference in Website Evaluations Obtained from Different Perspectives. *International Journal for Quality Research,* 11(2), 419–436.

Shawgi, E., Noureldien, N.A. (2015). Usability Measurement Model (UMM): A New Model for Measuring Websites Usability. *International Journal of Information Science,* 5(1), 5–13.

Signore, O. (2005). A Comprehensive Model for Web sites Quality. Distante, D. (Ed.). *Proceedings of Seventh IEEE International Symposium on Website Evolution (WSE 2005) içinde* (ss. 30–36). Los Alamitos, CA: IEEE.

Stevenson, J.S., Bruner, G.C., Kumar, A. (2000). Webpage Background and Viewer Attitudes. *Journal of Advertising Research*, 40(1), 29–34, https://doi.org/10.2501/JAR-40-1-2-29-34

Stopford, M. (2009). *Maritime Economics*. New York: Routledge.

TCDD (2018). *Limanlar.* URL. http://www.tcdd.gov.tr/content/68

TURKLIM (2017). *Yük Bilgileri.* URL. http://www.turklim.org/yuk-bilgileri/

UNCTAD, (1995), *Marketing Promotion Tools for Ports*. Report by the UNCTAD secretariat.

Van Iwaarden, J., Van der Wiele, T., Ball, L., Millen, R. (2003). Applying SERVQUAL to Web Sites: An Exploratory Study. *International Journal of Quality & Reliability Management*, 20(8), 919-935 https://doi.org/10.1108/02656710310493634

Virtsonis, N. Harridge- March, S. (2008). Website Elements in B2B Online Communications: A Case from the UK Print Industry. *Marketing Intelligence & Planning*, 26(7),699-718, https://doi.org/10.1108/02634500810916672

Woo, S. H., Pettit, S. J., Kwak, D. W., Beresford, A. K. (2011). Seaport Research: A Structured Literature Review on Methodological Issues Since the 1980s. *Transportation Research Part A: Policy and Practice*, 45(7),667- 685, https://doi.org/10.1016/j.tra.2011.04.014

Yeung, W. L., Lu, M. T. (2004). Functional Characteristics of Commercial Web Sites: A Longitudinal Study in Hong Kong. *Information & Management*, 41(3), 483–495, https://doi.org/10.1016/S0378-7206(03)00086-7

Youngblood, N. (2013). Integrating Usability and Accessibility into the Attractive Media and Communication Curriculum. *Global media journal: American edition*, 1-37, ISSN: 1550-7521

Özet

Limanlar, günümüz tedarik zincirlerinin önemli bir bileşeni olarak görülmektedirler. Gerek hammadde özelliği taşıyan yüklerin gerekse de değerli ve bitmiş ürünlerin yer değiştirdiği ve belirli ölçüde değer kazandığı düğüm noktaları olarak görev yapmaktadırlar. Birçok kullanıcıya hizmet veren liman organizasyonları oldukça güçlü rekabetçi baskının var olduğu bir iş çevresinde yer almaktadırlar. Bu noktada, verdikleri hizmetin kalitesine ek olarak hitap ettikleri müşterileri ve diğer paydaşlarıyla nasıl bir pazarlama iletişimi faaliyeti sürdürdükleri de oldukça önemlidir. Limanlar ile ilgili yazın taraması yapıldığında özellikle liman pazarlaması çalışmalarına oldukça kısıtlı bir şekilde yer verildiği görülmektedir. Liman pazarlaması çalışmaları içerisinde de pazarlama iletişiminin diğer alanlara göre daha az çalışıldığı ortaya konulmaktadır. Limanlardaki pazarlama iletişiminin ana bileşenleri pazarlama yazınından da hareketle, reklam, halkla ilişkiler, kişisel satış, satış promosyon olarak belirtilebilir. Tüm belirtilen bileşenlere yönelik belirli ölçüde bilgilendirme faaliyetlerinin gerek sosyal medya platformları gerekse de limanların web siteleri aracılığıyla gerçekleştirilmesi söz konusu olabilmektedir. Uyarlanabilir ve bilgilendirici içerikleriyle birçok kullanıcıya ulaşmadaki önemi sebebiyle web siteleri, limanların pazarlama iletişim aktivitelerinde önemli bir rol oynamaktadır. Bu çalışma, bu noktadan hareketle, Türkiye'deki konteyner limanlarının web sitelerinin iletişim kalitesini içerik analizi ile değerlendirmeyi hedeflemektedir. Her ne kadar limanların sosyal medya platformları ile ilgili az da olsa çalışma bulunsa da, ticari limanların web siteleri ile ilgili detaylı bir inceleme gerçekleştiren herhangi bir çalışmaya rastlanmamıştır. Bu çalışma, Türkiye'deki konteyner limanlarının web sitelerinin özelliklerini belirli boyutlar çerçevesinde incelemiştir. Ayrıca en fazla konteyner elleçlemesi yapan limanlara yönelik de çıkarımlar da bulunulmuştur. Çalışmanın ana çerçevesi Mich vd. (2003)'in önermiş olduğu web sitesi iletişim kalitesi modeli örnek alınarak oluşturulmuştur. Bu modeldeki boyutların içerisinde yer alan özellikler, konteyner limanları temel alınarak değiştirilmiştir. Oluşturulan çerçeve limancılık ve pazarlama alanında çalışan iki akademisyenin görüşleri ve önerileri alınarak son haline getirilmiştir. Limanların web sitelerinin değerlendirme sürecini takiben, deniz taşımacılığı ve lojistiğinde uzman olan bir başka akademisyen, her bir liman için belirlenen 81 adet özelliğin değerlendirmesini kontrol etmiştir ve böylece bulgulardaki objektiflik değerlendirilmiştir. Toplamda 81 adet özellik 26 konteyner limanı için tek tek değerlendirilerek çeşitli bulgulara ulaşılmıştır. Web sitesi iletişim kalitesi açısından genel puanlar dikkate alındığında, ilk on konteyner limanı olarak listelenen limanların çoğunun da yüksek puanlar aldığı görülmüştür. Özel limanların, genel değerlendirme açısından ticarileştirilmiş ve devlet limanlarından önemli ölçüde daha yüksek puan aldığı da vurgulanmıştır. İki devlet limanı olan İzmir Alsancak ve Haydarpaşa'nın değerlendirmede en düşük puanı aldığı görülmüştür. Bu limanların web siteleri, Türkiye Cumhuriyeti Devlet Demiryolları'nın (TCDD) ana web sitesi altında sınıflandırılmıştır ve bu limanlara sadece tek bir web sayfası tahsis edilmiştir. Bu nedenle, Haydarpaşa ve İzmir Alsancak limanları, TCDD'nin ana web sitesinin standart yapısı nedeniyle aynı puanı almıştır. Özel ve ticarileştirilmiş limanların puanlarının devlet limanlarından daha yüksek olması, özel ve ticarileştirilmiş limanların ağırlıklı olarak yatırımlara önem vermesi, elleçleme miktarları ve pazar paylarını arttırma çabaları ve dolayısıyla da pazarlama faaliyetlerinin bir bileşeni olan web sitelerinin kalitesini de arttırmayı beraberinde getirmektedir. İncelenen konteyner yirmi altı konteyner limanı için hesaplanan genel puanlar dikkate alındığında, Konum (% 32.7), Hizmet (% 38.8) ve İçerik (% 39.2) boyutlarının en düşük puanları elde ettiği görülmektedir. Bakım boyutunun toplam puanı diğer boyutlar içerisinde % 75'in üzerinde olan tek boyut olarak göze çarpmaktadır. Bunu Fizibilite, Kimlik ve Kullanılabilirlik takip etmektedir. Hizmet ve İçerik boyutları özel olarak ele alındığında, konteyner limanlarının kendi web sitelerinin içeriğine yeterince dikkat etmediği ve kullanıcıların web sitelerinde gezinmesini kolaylaştırıcı özelliklerle donatmadığı belirtilebilir. Her iki boyuttaki düşük puanlar, çalışmanın örneklemindeki limanların bu yöndeki eksikliklerini işaret etmektedir. Limanların sunduğu altyapı ve üstyapı ile birlikte sunulan hizmetlerin limanların hizmet kalitesinde önemli bir rol oynaması nedeniyle konteyner liman sektöründe özellikle pazarlama aktiviteleri açısından bu yöndeki eksikliklerin web siteleri özelinde giderilmesi gerekmektedir. Türk konteyner limanlarının web sitelerinin özelliklerini inceleyen ilk çalışma olarak bu araştırma, web sitelerinin iletişim kalitesi ile ilgili teorik altyapıyı desteklemekle birlikte, limancılık sektöründeki özellikle pazarlama alanında çalışan uygulayıcılara da web sitelerini geliştirmede önemli rol oynayabilecek öneriler sunmaktadır.

Appendix 1: Dimensions and Attributes of the Model

Dimension	Attribute	Explanation	Categorization
Identity			
I1	Port name in site URL	Does the website have port name in site URL?	Not exist (0) Exists as abbreviation (1) Exists as full port name (2)
I2	Corporation logo	Does the website have corporation logo?	Not exist (0) Exists in homepage (1) Exists also in other pages (2)
I3	Mission / vision statements	Does the website have mission and vision statements?	Not exist (0) Exist only one of them (1) Exist together (2)
I4	Tale/territory regarding the port	Does the website tell and communicate the port and the local area?	Not exist (0) Exist within this section (1) Exist as a separate section (2)
I5	Port history	Does the website have port history section?	Not exist (0) Exist as text (1) Exist as dynamic schema (2)
I6	Organization/organization chart	Does the website have a section regarding the organization chart?	Not exist (0) Exist as a list (1) Exist as schema (2)
I7	Messages from top management	Does the website have “messages from top management section”?	Not exist (0) Exist for a single manager (1) Exist for more than one manager (2)
Content			
C1	Photos of general view	Does the website have photos of general view of the port?	Not exist (0) Exist with low resolution (1) Exist with high resolution (2)
C2	Photos of infrastructure	Does the website have photos of infrastructure of the port?	Not exist (0) Exist with low resolution(1) Exist with high resolution (2)
C3	Photos of superstructure	Does the website have photos of superstructure of the port?	Not exist (0) Exist with low resolution(1) Exist with high resolution (2)
C4	Photos of handling equipment	Does the website have photos of handling equipment of the port?	Not exist (0) Exist with low resolution (1) Exist with high resolution (2)
C5	Information on services provided to ships	Does the website provide information on port services provided to ships?	Not exist (0) Attainable with one click in separate section (1) Available in main page (2)
C6	Information on services provided to cargoes	Does the website provide information on port services provided to cargoes?	Not exist (0) Attainable with one click in separate section (1) Available in main page (2)
C7	Information on port infrastructure (access channels, jetties, berths etc.)	Does the website provide information on port infrastructure (access channels, jetties, berths etc.)?	Not exist (0) Attainable with one click in separate section (1) Available in main page (2)
C8	Information on port superstructure (silos, offices, paving, sheds, warehouses etc.)	Does the website provide information on port superstructure (paving, sheds, warehouses etc.)?	Not exist (0) Attainable with one click in separate section (1) Available in main page (2)
C9	Information on port handling equipment	Does the website provide information on handling equipment?	Not exist (0) Attainable with one click in separate section (1) Available in main page (2)
C10	Information on port cargo handling statistics	Does the website provide information on port statistics?	Not exist (0) Attainable with one click in separate section (1) Available in main page (2)
C11	Information on hinterland connections (intermodality etc.)	Does the website provide information on hinterland connections?	Not exist (0) Attainable with one click in separate section (1) Available in main page (2)
C12	Information related to the shipping lines calling at ports	Does the website contain any information on shipping lines calling at port?	Not exist (0) Attainable with one click or in main page (1) Available in main page (2)
C13	Information about container port industry, issues related to port industry	Does the website provide information on container port industry?	Not exist (0) Exist but not updated (1) Exist (2)
C14	Innovation-related information	Does the website have section about innovations-new services?	Not exist (0) Exist within other sections (1) Exist as a separate section (2)

C15	Webcam	Does the website have a frequently updated webcam on the port?	Not exist (0) Exist but not updated (1) Exist and updated (2)
C16	Links	Does the website provide useful and easy reach links to other relevant sites?	Not exist (0) Exist but links are broken (1) Exist (2)
C17	Documents	Is it possible to download relevant documents (brochures, regulations etc.) from the website?	Not exist (0) Exist but not active(1) Exist (2)
C18	Images and multimedia	Does the website provide images and multimedia contents?	Not exist (0) Exist only one of them (1) Exist together (2)
C19	Certificates (quality certificates-ISO 9001, green port certificates etc.)	Does the website contain any information on certificates of port?	Not exist (0) Exist but documents are not attainable (1) Exist -documents are attainable (2)
C20	Information Related with Stakeholders	Does the website have information on stakeholders?	A separate section do not exist (0) Exist as a separate section for one stakeholder (1) Exist as a separate section for more than one stakeholder (2)
C21	Issues related to social sustainability (corporate social responsibility, gender issues, ethics etc.)	Does the website provide information on social aspects of sustainability issues of the port?	Not exist (0) No report exist but topics mentioned in site (1) Exist separate reports for each, or at least for one of them (2)
C22	Issues related to environmental sustainability	Does the website provide information on environmental aspects of sustainability issues of the port?	Not exist (0) Not exist as a separate section (1) Exist as a separate section (2)
C23	Financial information, annual reports	Does the website provide financial information regarding the port?	Not exist (0) Not exist as a separate section (1) Exist as a separate section (2)
C24	Procedures	Does the website provide information on procedures for Cargo and ship operations?	Not exist (0) Not exist as a separate section (1) Exist as a separate section (2)
C25	Container tracking	Does the website have a container tracking section?	Not exist (0) Exist but not active (1) Exist (2)
C26	Distance to other ports	Does the website show port's distance to other ports?	Not exist (0) Exist but not active (1) Exist (2)
C27	Port catalogue	Does the port have a specific port catalogue?	Not exist (0) Exist but not active (1) Exist (2)
Location			
L1	Intuitive domain name	Is the web site URL intuitive and easy to remember?	Not exist (0) Exist (1)
L2	Contact information of site designer	Is it easy to contact the website manager? Are contact data clear and easy to find?	Not exist (0) Exist (1)
	Social networks	Does the website link to social media account(s)?	
L3	Facebook		Not exist (0) Exist (1)
L4	Twitter		Not exist (0) Exist (1)
L5	LinkedIn		Not exist (0) Exist (1)
L6	Instagram		Not exist (0) Exist (1)
L7	Youtube		Not exist (0) Exist (1)
L8	Google Plus		Not exist (0) Exist (1)
L9	Interaction among users (community)	Can the website visitors interact with each other?	Not exist (0) Exist (1)
Service			
S1	Weather forecast	Does the website provide a reliable and visible marine forecast service?	Not exist (0) Exist but not real-time (1) Exist (2)
S2	Navigational support	Does the website provide navigational information for the ships?	Not exist (0) Exist but not active (1) Exist (2)
S3	Online customer portal (online platform dedicated to the container tracking, pricing, latest changes in the regulations etc.)	Does the website have online customer portal?	Not exist (0) Exist but not working (1) Exist and work (2)

S4	Maps	Does the website provide maps of the port?	Not exist (0) Exist but not updated (1) Exist and updated (2)
S5	News/announcements	Does the website have news/announcements section?	Not exist (0) Exist but not working (1) Exist and work (2)
S6	E-mail	Does the website have e-mail for users to contact?	Not exist (0) Only one mail address exist (1) Exist for more than one mail address (2)
S7	Newsletter	Is it possible to access newsletters?	Not exist (0) Exist but limited to information sharing (1) Exist and available as e-newsletter or publications (2)
S8	FAQs	Does the website have frequently asked questions section?	Not exist (0) Exist but not active (1) Exist (2)
S9	Human resources/employment opportunities	Does the website have human resources section?	Not Exist (0) Applications made by an external site (1) Website accepts applicationsthrough its system, a specific database/form for job applications (2)
S10	Customer satisfaction questionnaire	Does the website have customer satisfaction questionnaire?	Not exist (0) Exist but not active (1) Exist (2)
S11	Online guest book/comment form	Is it possible to leave a comment in a guest book?	Not exist (0) Exist but not active (1) Exist (2)
Maintenance	**Positive features**		
M1	Site last update date	Are information updated? Is the last update date available?	Not exist (0) Exist (1)
M2	Site counter	Does website have site counter?	Not exist (0) Exist (1)
	Negative features		
M3	Loading problem of pages	Does the website have loading problems?	Not Exist (1) Exist (0)
M4	Broken link	Are there broken links in the website?	Not Exist (1) Exist (0)
M5	"Under construction" pages	Are there any “under construction” pages?	Not Exist (1) Exist (0)
M6	Correctness of the text	Are there any typos in the text?	Not Exist (1) Exist (0)
M7	Errors in hypertexts/icons/buttons	Are the any errors/typos in hypertexts and icons?	Not Exist (1) Exist (0)
M8	Errors in pictures/animations	Are the any errors/typos in pictures and animations?	Not Exist (1) Exist (0)
Usability	**Positive features**		
U1	Mobile version	Is a mobile version of the website available? OR is the PC version easy to surf with a smartphone or tablet?	Not exist (0) Exists but do not work (1) Exists and works (2)
U2	Search engine	Is a search function available?	Not exist (0) Exists but do not work (1) Exists and works (2)
U3	Site map / table of contents	Does the website have a site map or table of contents?	Not exist (0) Site map exists but not active(1) Site map exists and active (2)
U4	Language options	Are versions of website available in other languages rather than the local one?	Exist only in Turkish (0) Exist only in Turkish and English (1) Exist in more than one language (2)
U5	Return to home page link Back to the top of the page link	Are there buttons for returning to home page link or back to the top of page link?	Not exist (0) Exists but do not work (1) Exists and works (2)
U6	Go to next or previous page link	Are there buttons for going to next or previous page?	Not exist (0) Exists but do not work (1) Exists and works (2)
U7	Navigation bar in home page	Is there navigation bar in home page?	Not exist (0) Exists but do not work (1) Exists and works (2)
U8	Vertical / horizontal scrolling	Is it possible to scroll vertically and horizontally?	Not exist (0) Exists but do not work (1) Exists and works (2)
U9	Skip intro	Is there “skip intro” button?	Not exist (0) Exists but do not work (1) Exists and works (2)
U10	Labels of photos	Are there labels of the photos?	Not exist (0) Exists in some photos (1)

			Exists in all photos (2)
U11	Title of pages	Does each page have a title?	Not exist (0) Exists in some pages (1) Exists in all pages (2)
U12	Navigation bar in page bottom	Is there navigation bar at the bottom of the page?	Not exist (0) Exists but do not work (1) Exists and works (2)
Feasibility	**Positive features**		
F1	Page hierarchy	Does the website have consistent page hierarchy?	Not exist (0) Exist (1)
F2	Resolution/browser information	Does website have resolution/browser information?	Not exist (0) Exist (1)
F3	Photo, flash animations etc.	Does website have photos and flash animations?	Not exist (0) Exist (1)
F4	Privacy and security statement	Is there any privacy and security statement?	Not exist (0) Exist (1)
F5	Download section	Is there download section at the website?	Not exist (0) Exist (1)
F6	Printing of pages available	Is it possible to print the pages?	Not exist (0) Exist (1)
F7	Saving of pages available	Is it possible to save the pages?	Not exist (0) Exist (1)