Türk Otel Web Siteleri Üzerine Bir Değerlendirme: EMICA İçin Yeni Bir Bakış Açısı[1]

***

An Evaluation of Turkish Hotel Websites: A New Perspective For EMICA

Muhammet Sait AĞ[2]
Kutan KORUYAN[3]

DOI:10.33461/uybisbbd.1344425

Makale Bilgileri

Makale Türü: Araştırma Makalesi

Geliş Tarihi: 16.08.2023

Kabul Tarihi: 12.12.2023

Öz

Günümüzde web siteleri otel işletmeleri için önemli bir pazarlama aracı haline gelmiştir. Bu nedenle, otel web sitelerinin kalitesi ve sundukları içerik, potansiyel müşterilerin satın alma kararlarını etkileyen önemli faktörlerdir. Bu faktörlerin incelenmesi, otel web sitelerinin gelişmişlik düzeyinin ortaya konmasını da kapsamaktadır. Bu nedenle, bu çalışmada Türkiye'deki otel web siteleri Genişletilmiş İnternet Ticareti Benimseme Modeli (eMICA) yöntemi kullanılarak değerlendirilmiştir. Çalışmada, literatürdeki diğer çalışmalardan farklı olarak, veriler Python programlama dili kullanılarak veri kazıma yoluyla otomatik olarak elde edilmiş ve betimsel analiz teknikleriyle analiz edilmiştir. Çalışma sonuçları, Türk otel web sitelerinin yeterli olgunluğa sahip olmadığını göstermiştir. Otel işletmeleri web sitelerini kapsamlı bir pazarlama aracı olarak kullanmak yerine genellikle tanıtım amaçlı kullanmaktadır. Çalışma ayrıca yeni kriterler ekleyerek eMICA yönteminin geliştirilmesine katkıda bulunmayı amaçlamıştır.

Anahtar Kelimeler: *eMICA, otel web siteleri, elektronik pazarlama, web sitelerinin değerlendirmesi.*

Article Info

Paper Type: Research Paper

Received: 16.08.2023

Accepted: 12.12.2023

Abstract

Today, websites have become an important marketing tool for hotel businesses. Therefore, the quality of hotel websites and the content they deliver are important factors that influence the purchasing decisions of potential customers. Investigating these factors involve demonstrating the level of development of hotel websites. Therefore, this study evaluated hotel websites in Türkiye using the Extended Model of Internet Commerce Adoption (eMICA) method. In the study, dissimilar to other studies in the literature, the data was obtained automatically via data scraping using Python programming language and analysed with descriptive analysis techniques. The study results showed that Turkish hotel websites did not have a sufficient degree of maturity. Hotel businesses generally used their websites for promotional purposes rather than as a comprehensive marketing tool. The study also aimed to contribute to the improvement of the eMICA method by adding new criteria.

Keywords: *eMICA, hotel websites, electronic marketing, evaluation of websites.*

Atıf/ to Cite (APA): Ağ M.S. & Koruyan K. (2023). An Evaluation of Turkish Hotel Websites: A New Perspective For EMICA. International Journal of Management Information Systems and Computer Science, 7(2), 142-156. DOI:10.33461/uybisbbd.1344425

[1] Bu çalışma Muhammet Sait Ağ'ın Dokuz Eylül Sosyal Bilimler Enstitüsü Yönetim Bilişim Sistemleri ABD'da başarı ile tamamladığı yüksek lisans tezinden üretilmiştir.

[2] Yüksek Lisans, Sosyal Bilimler Enstitüsü, Dokuz Eylül Üniversitesi, msaitag@outlook.com, İzmir, Türkiye.
[3] Dr Öğr. Üyesi, İktisadi ve İdari Bilimler Fakültesi, Dokuz Eylül Üniversitesi, kutan.koruyan@deu.edu.tr, İzmir, Türkiye.

1. INTRODUCTION

Offering global reach and multimedia capabilities, the Internet has become increasingly important in the promotion and distribution of tourism services, as in many other sectors (Litucy & Rail, 2000). The presence of tourism businesses in the virtual environment is no longer exclusive to large hotels; for independent hotels, a website with high design quality and usability has become an effective marketing tool that can increase their competitiveness in the market (Meroño-Cerdan & Soto-Acosta, 2007). Thus, many chains and independent hotel companies have developed their own websites. In addition, operating a website is no longer an extraordinary cost for businesses today. Moreover, having a website allows hotel businesses to manage business processes at a bigger scale with a larger worldwide potential customer base, irrespective of geographical location, time zone and the hardware features of the technological instrument through which the Internet is accessed (Yeung & Law, 2004).

Most consumers today conduct their purchases through commercial websites. Moreover, hotel businesses need to have an online presence in order to survive and compete. An online presence enables the provision of information on accommodation, booking and sales through direct channels based on customer preferences (Assiri & Shamsudeen, 2019). In this context, the Internet is recognized as an effective marketing tool for the tourism industry (Buhalis & Law, 2008). In addition to ensuring an attractive and informative web interface as possible, it is also essential to plan, develop and evaluate hotel and resort websites to convert visitors into buyers (Ramos & Perna, 2009).

Online presence is critical for hotels, and website quality can influence customer attitudes towards products and services (Assiri & Shamsudeen, 2019). A website can be regarded as an online store and thereby characterizes the online shopping environment. Similar to the offline environment where consumers need traditional cues such as brand and reputation to make decisions, internet users rely on website features to evaluate potential gains and losses (Wang et al., 2015). At the same time, website elements and the level of website maturity have become important for businesses for ensuring customer satisfaction, increasing profitability, and sustaining their existence. Measuring and improving the features and development level of e-commerce website interfaces enable businesses to become more successful in electronic marketing and commercial aspects, which provides greater website design efficiency for information publishing, interaction, and transactions.

In order to investigate the virtual presence of businesses and their commercial website interfaces, the study evaluated the websites of 260 hotels operating in Türkiye, registered to the Hotel Association of Türkiye (Türkiye Otelciler Birliği: TÜROB), in 3 categories (3-, 4- and 5-star), based on the measurement of their features and degree of maturity. An Extended Model of Internet Commerce Adoption (eMICA) with 37 criteria was adopted as the scale for evaluation. Then, descriptive analysis techniques were used to examine the existence of statistically significant differences between hotel categories.

In past studies, data collection for the eMICA model was carried out through individual website visits, which, along with the fact that these studies were conducted over prolonged periods, also created a cost constraint. Furthermore, in some studies where websites were evaluated with content analysis or the eMICA model, data collection was performed by more than one observer (Cristobal-Fransi et al., 2018; Cristobal-Fransi et al., 2020; Daries et al., 2020; Kim & Kuljis, 2010). However, different perspectives of multiple observers can yield varying results for some criteria. In contrast to the general literature, the present study adopted an innovative approach, data extraction was conducted automatically for each criterion with codes developed using Python programming language. In other words, we developed algorithms that scan web pages to gather data for each eMICA item via web scraping, which enabled data collection from the HTML architecture of web pages. Our methodology allowed analysing a much larger number of websites, minimizing time constraints, and reducing time cost, as well as eliminating subjective approaches due to multiple-observer evaluations.

2. THE EMICA MODEL

Originally developed in a simple framework, commercial websites have evolved over time to become more complex and functional as businesses accumulated experience in information and communication technologies (ICT) (Poon & Swatman, 1999; Van Skyle, 2000). With the increase in the number of internet users, people started to spend more time on the internet and make their purchases online, thus increasing the importance of the maturity of websites. Therefore, Cooper and Burgess (2000) introduced the Model of Internet Commerce Adoption (MICA) to explain the evolutionary process of e-commerce adoption and to analyse the degree of website maturity.

Basically, the MICA model consists of 3 stages: Promotion, Provision and Processing (Figure 1). While the Promotion stage includes features that signify basic information about the business, Provision includes more advanced information and features that the user can interact with the site. The Processing stage, which indicates the highest MICA maturity level, consists of the most complex and sales-oriented site elements.

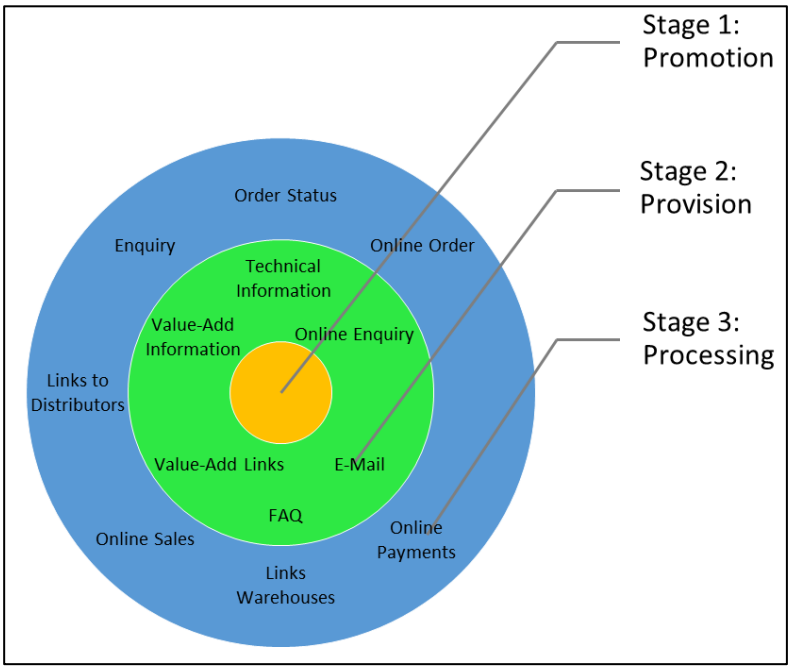

Figure 1: Stages of the MICA Model (Goi, 2007)

The MICA model, first developed to evaluate the websites of the metal manufacturing industry in Australia, was characterized as an instrument that identifies the position of an organization or industry on the Internet commerce roadmap and explains the processes by which it has arrived at that position (Cooper & Burgess, 2000). The model suggests that, in the development of commercial websites, businesses often start with a simple website and this presence gradually grows more complex, incorporating new processes as the business builds up experience and knowledge of ICT utilization (Cristobal-Fransi et al., 2020).

The MICA model was extended and updated as eMICA for application in different sectors (Burgess et al., 2011). eMICA includes some additional layers ranging from simple to advanced levels of maturity to adapt to e-commerce with a broad scope of development in different industries. The eMICA model, similar to the MICA model, comprises three stages that characterize the business process in three levels: Web-based Promotion, Provision, which refers to the delivery of information and services, and finally Processing (Anandkumar & Kumar, 2015). In the eMICA model, dissimilar to the MICA model, the items in the Promotion stage are categorized as basic and rich information, while the Provision stage consists of three layers from low- to high-level interactivity (Table 1). The

first stage of the eMICA model, Promotion, includes more basic information about the business, such as phone number and e-mail address. The second stage, Provision, encompasses various items that allow access to more advanced information on the business, as well as interaction with the website, such as a photo album, a membership system, and video content. The third and final stage, Processing, involves criteria relevant to the purchasing transactions of visitors, such as online booking.

Table 1: Stages of the eMICA Model

Stages	Layers
Stage 1: Promotion	Layer 1: Basic Information Layer 2: Rich Information
Stage 2: Provision	Layer 1: Low Interactivity Layer 2: Medium Interactivity Layer 3: High Interactivity
Stage 3: Processing	

In the first stage of the eMICA model, the use of the Internet as a communication tool and the services offered by the business can be observed. The second stage considers the interactivity, i.e. whether the website is dynamic or not. The last stage refers to the capacity to carry out e-commerce securely. The stages of eMICA present a clear relationship with the evolution of the Internet, from the first web pages, which were very simple in terms of content and information, to the latest web pages, which are very complete and offer many different functionalities (Ramón-Cardona et al., 2022).

Websites are in a constant state of change and development. At the point of evaluating websites in terms of content, there is no scale consisting of unchanging rules and criteria. eMICA model has been used in the literature for many years because it standardises the website evaluation process to some extent. New features added to websites over time are added to the appropriate layer of eMICA and contribute to the development of the model.

3. LITERATURE REVIEW

In past research, the eMICA model was used as a scale for evaluating websites in various fields, particularly in the field of tourism. However, content analysis methods have also been utilized in conjunction with eMICA, and some of these studies have adopted descriptive analysis techniques in the evaluation of the data gathered from the scale (Ahmed & Shaker, 2021; Assiri & Shamsudeen, 2019; Cristobal-Fransi et al., 2018; Cristobal-Fransi et al., 2020; Daries et al., 2018; Daries et al., 2020).

While a commercial website has a level of maturity corresponding to the lower layers of eMICA when it is first developed, it can advance to the higher levels of eMICA as the company gains experience in the field of information technologies. For example, Burgess et al. (2011) evaluated the websites of regional tourism organizations in Australia at four different times: 2000, 2002, 2004 and 2008. While only 0.53% of the websites evaluated for the year 2000 had a maturity level conforming to eMICA's highest level of maturity, this rate was computed as 1.32% for 2002, 8.72% for 2004 and the highest rate of 19.61% for 2008. Anandkumar & Kumar (2015) analysed the websites of regional tourism organizations in 2010 and 2015, reporting that their position on the eMICA model in 2015 had improved to a more advanced level in comparison to 2010.

Daries-Ramon et al. (2016) documented a relatively advanced level of technological sophistication for the websites of ski resorts in Spain and Andorra. Daries-Ramon et al. (2017) evaluated the websites of 102 restaurant businesses in Spain, determining that only 1 website was able to attain the highest maturity level of eMICA, whereas the majority had a level of development at the Promotion and low level of Provision levels.

Cristobal-Fransi et al. (2017) analysed the websites of 52 Alpine and Nordic ski resorts in Spain and Andorra and found that the average level of maturity corresponded to the medium level of eMICA and that the websites of ski resorts in the Alpine category had a higher level of development compared to those in the Nordic category.

Zhou & Jia (2018) assessed the websites of 73 different tourist attractions in the Shanghai region with the eMICA method. 15 of the websites had a level of maturity corresponding to the highest level of eMICA. The study results showed that the majority of the websites were updated over very long periods, had low interactive capacity, and lacked online user support and online purchasing activities.

Daries et al. (2018) analysed the websites of 980 restaurant businesses in France, Italy, and Spain with eMICA and Web Content Analysis (WCA). Less than 5% of the websites analysed were developed in accordance with stage 3 of eMICA, while the vast majority of the sites had a maturity level corresponding to layer 2 of stage 1 or layer 1 of stage 2 of eMICA. 10% of the establishments did not have a website or had a completely static website, whereas less than 30% of the establishments had a website developed for transactions through the website. These results indicated that most of the websites had a low level of interactivity and were mostly used for informative purposes.

Assiri & Shamsudeen (2019) evaluated the websites of 42 5-star hotels in Saudi Arabia using Advanced Content Analysis (ACA) and eMICA. The study results revealed that 5-star hotels in Saudi Arabia had not yet fully utilized the potential of their websites as a marketing tool, with the majority of the websites incorporating elements that express fundamental information, such as basic and rich information.

Fernandez-Ucles et al. (2019) assessed 533 websites of organic farmers in Spain. In this study, fuzzy-set Qualitative Comparative Analysis (fsQCA) and eMICA were used together. According to the results of the study in terms of eMICA, it was found that the websites are quite inadequate in terms of having the features of the other stages except the first stage of eMICA. It was observed that the functionality of the evaluated websites cannot go beyond providing information about the business.

In another study, Daries et al. (2020) analysed the websites of golf courses in Catalonia with eMICA and WCA. In the study, they emphasized the importance of websites in informing visitors and explaining the content to ensure tourist participation in sports organizations such as golf. The results showed that Catalonian golf courses had a simple and static online appearance, and only 10% of the sites evaluated had a website maturity at the highest stage of eMICA. They commented that golf courses did not make adequate use of technological resources in website development and that there were improvements that still needed to be implemented.

Cristobal-Fransi et al. (2020) assessed the websites of 104 agricultural food cooperatives of olive oil, wine, and fruit producers in Catalonia, with content analysis and eMICA. The study revealed that only 5.8% of the websites were able to fulfil the criteria for the third stage of eMICA, concluding olive oil, fruit and wine cooperatives possessed an awareness of online presence but had not transcended basic online visibility. These agricultural cooperatives were found to have deficiencies in their online presence, particularly in terms of user interaction and consumer relations, and needed further amendment.

Cristobal-Fransi et al. (2021) analysed 77 websites of public and private museums in Spain using Web Content Analysis and the eMICA model. It was found that only 38% of the websites were

able to reach a maturity at the highest level of development of eMICA, and that the websites of public museums were more successful at all stages of eMICA compared to the websites of private museums.

Meslem & Abderrahim (2022) investigated luxury hotels in Algeria via eMICA and content analysis, noting certain feature variations between hotels. They concluded that fundamental website elements (such as basic information, marketing, and services) were well implemented, but high interactivity features required improvement, with the full potential of the Internet not having been fully utilized for luxury hotels.

Cristobal-Fransi et al. (2023) evaluated the websites of Spainish spas in the context of health tourism. In addition to Content Analysis Technique, eMICA model was also used to evaluate the websites. According to the results, while the websites have good success rates in the simple, rich information and low, medium interaction layers of eMICA, they were found to be quite inadequate in the high interaction and processing layers, which express a higher level of development. The results obtained from over 106 different websites are similar to many other studies using the eMICA method.

4. METHODOLOGY

The study comprises 5 steps:

(1) eMICA model construction, (2) coding for web scraping, (3) data collection, (4) accuracy check and (5) data analysis (Figure 2).

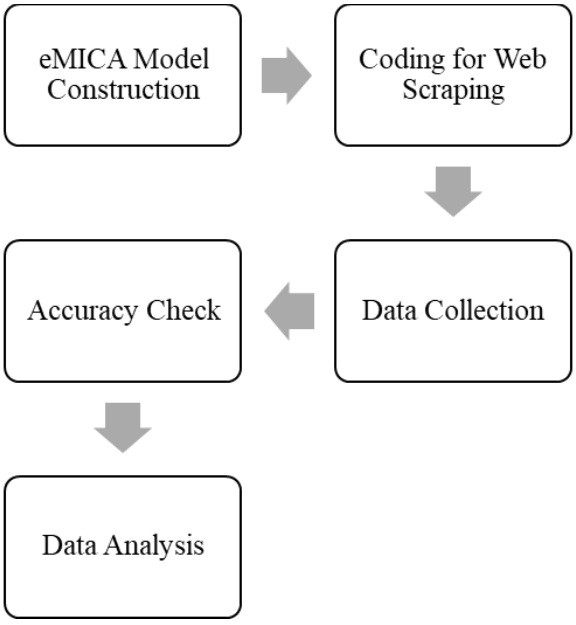

Figure 2: Study flowchart

4.1. eMICA Model Construction

In the first step of the study, the eMICA model was constructed, and the criteria in the model were adapted from Ting et al. (2013). In addition, 4 new criteria, namely COVID-19 notification, telephone link, e-mail link and cookie consent option, were adapted to the eMICA model by the authors, and the scale was updated to include a total of 37 criteria (Table 2).

Table 2: The eMICA Model Used in the Study (Compiled by the authors, adapted from Ting et al. (2013))

Stages	Layers	Website Features
Stage 1: Promotion	**Layer 1: Basic Information**	Telephone, address, fax, e-mail
	Layer 2: Rich Information	About us, awards, privacy policy, COVID-19 notification, cookie policy
Stage 2: Provision	**Layer 1: Low Interactivity**	E-mail link, telephone link, rooms and suites, restaurants and bars, activities and recreation information, meeting and conference facilities, photo album/gallery, map information, weather forecast, local time, press releases
	Layer 2: Medium Interactivity	Membership system, frequently asked questions, special offers and packages, sitemap, in-site search, cookie consent option
	Layer 3: High Interactivity	Video content, virtual tour, multi-language support, live support, e-bulletin, link to social media accounts, link to Tripadvisor, mobile application information
Stage 3: Processing	**Layer 1: Processing**	Online booking, secure online sales, best price guarantee, technical capacity

4.2. Web Scraping and Data Collection

The study data were gathered from the websites of 260 3-5-star hotels registered at the Hotel Association of Türkiye and certified by the Turkish Republic Ministry of Culture and Tourism on November 1-8, 2022. The number of the 3-, 4- and 5-star hotels whose websites were evaluated were 51, 97 and 112, respectively.

In contrast to previous studies, data collection for each eMICA criterion was performed with Python programming language and the web scraping library, Beautiful Soup. Beautiful Soup is a Python library designed for extracting data from HTML and XML files. It collaborates with parsers to offer intuitive methods for navigating, searching, and altering the parse tree, often saving developers significant time (Richardson, 2023). In addition, the Selenium Webdriver library was used to launch the browser with Python applications and the Multiprocessing library, which allows multiple processes to run simultaneously using multiple processor cores. The data sets of each eMICA stage obtained through the Python codes were first stored in JSON (JavaScript Object Notation) and then converted to CSV (Comma Separated Values) for statistical analysis.

Considering the website features listed in Table 2, specific keywords belonging to each level were crawled on the websites. For example, to obtain the basic information in Layer 1, keywords such as "phone number," "phone," and "address," as well as items such as "Contact" and "Get in touch" were searched on hotel websites in Turkish and English. As another example, to inquire room information from the low interactivity section of Layer 1, the keywords "rooms," "accommodation," and "stay" were searched on the websites in Turkish and English.

4.3. Accuracy Check and Data Analysis

In order to determine the accuracy of all eMICA items gathered by computer, not by observation, 26 websites, constituting 10% of the total number of websites, were randomly selected; each site was visited, and the items were identified and compared by a human. Following this comparison, the data collected for each criterion with an accuracy rate of more than 80% were analysed with the SPSS software. The analysis results were interpreted, the maturity levels of the

hotel websites were examined, and the existence of statistically significant differences between categories in criteria satisfaction rates was investigated.

Table 3 shows the accuracy rates of the data collected with web scraping. The results indicated an accuracy rate greater than 80% for the data gathered with coding, except for the "Multi-Language" criterion. Therefore, in the subsequent steps of the study, the "Multi-Language" criterion was discarded, and data analysis was conducted with 36 criteria.

Table 3: Accuracy Rates of Data Collected by Web Scraping

eMICA Item	Accuracy Rate (%)	eMICA Item	Accuracy Rate (%)
Telephone	100	News in the Press	92.30
Address	96.15	Membership System	92.30
Fax	96.15	Frequently Asked Questions	100
E-mail	100	Special Offers and Packages	92.30
About Us	84.61	Sitemap	100
Awards	96.15	In-site Search	88.46
Privacy Policy	96.15	Cookie Consent Option	84.61
Covid-19 Notification	84.61	Video Content	96.15
Cookie Policy	92.30	Virtual Tour	92.30
E-mail Link	100	Multi-Language	65.38
Telephone Link	100	Live Support	92.30
Rooms and Suites	100	E-bulletin	84.61
Restaurants and Bars	100	Link to Social Media Accounts	96.15
Activity and Recreation Information	92.30	Link to Tripadvisor	92.30
Meeting and Conference Areas	100	Mobile Application Information	96.15
Photo Album/Gallery	96.15	Online Booking	88.46
Map Information	92.30	Secure Online Sales	100
Weather Forecast	80.76	Best Price Guarantee	96.15
Local Time	92.30		

Cronbach's Alpha, computed from the pairwise correlations of the results obtained from the 36 criteria to determine the internal reliability of the scale, was found to be 0.733, which indicated high internal reliability for the eMICA model used in evaluation. Furthermore, a high coefficient signified that the items in the scale were consistent with each other, and that the evaluation instrument comprised items that measured the same criterion (Uzunsakal & Yıldız, 2018).

In the study, the data were analysed to determine whether hotel businesses categorized by star rating had significant differences in website content levels. Table 4 shows the performance levels of hotel businesses in different categories according to each eMICA stage and layer. The results demonstrated that the websites of 5-star hotels had a higher performance at each stage of eMICA than 4-star hotels, and similarly 4-star hotels performed better than 3-star hotels.

A One-Way ANOVA test was conducted to determine whether this difference between hotel categories was statistically significant. A one-way analysis of variance is a descriptive analysis technique used to investigate the existence of a statistically significant difference between the means of independent groups. As the ANOVA test can be applied to normally distributed data sets, we first tested if the data was normally distributed.

Table 5 presents the kurtosis and skewness coefficients from the normality test. Kurtosis and skewness values between -1 and +1 indicate normally distributed data and thereby the suitability of the data set for an ANOVA test. Figure 3 shows the histogram plot of the distribution of the data set, which reveals that the number of sites with the most eMICA criteria is 1 with 29, and the number of sites with the fewest eMICA criteria is 1 with 5.

Table 4: Hotel eMICA Performance by Category

Layers and Stages	3-Star Hotels (%)	4-Star Hotels (%)	5-Star Hotels (%)
Stage 1: Promotion	**51.41**	**56.93**	**63.88**
Layer 1: Basic Information	86.27	86.76	79.68
Layer 2: Rich Information	23.52	35.46	51.35
Stage 2: Provision	**31.69**	**38.96**	**43.89**
Layer 1: Low Interactivity	45.98	58.85	62.50
Layer 2: Medium Interactivity	13.07	19.58	24.70
Layer 3: High Interactivity	25.21	24.30	31.12
Stage 3: Processing	**54.24**	**65.97**	**73.51**
Overall Performance	**38.50**	**45.70**	**51.36**

Table 5: Normality Test Results

	Statistics	Standard Deviation
Skewness	0.128	0.151
Kurtosis	-0.563	0.301

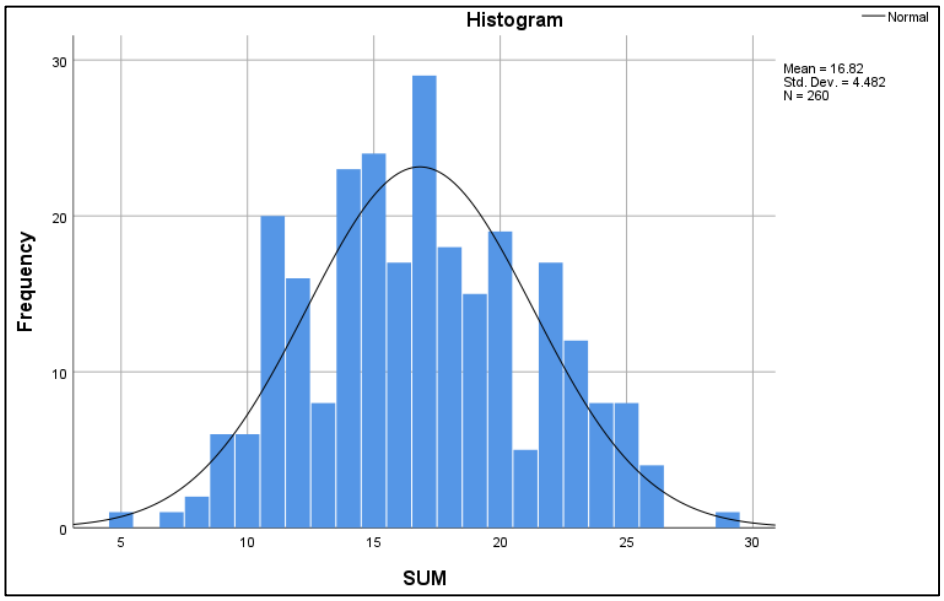

Figure 3: Data Distribution

A One-Way ANOVA test was performed after normality of distribution was confirmed. Table 6 reveals the ANOVA test results, which demonstrate a significant difference between hotel categories with respect to the quantity of eMICA items ($P < 0.05$). Then, the Tukey test, a post-Hoc test, was applied to the data set to identify the categories between which significant differences existed, as well as the direction of these differences.

Table 6: One-Way ANOVA Test Results

Stars	Number of hotels	Mean	Min	Max	Standard Deviation	Frequency	P value
3	51	13.86	7	23	3.633		
4	97	16.45	5	25	4.095	22.387	0.000
5	112	18.49	9	29	4.411		
Total	260	16.82	5	29	4.482		

Table 7 illustrates the results of the Tukey test, which indicates that the most successful hotel category in terms of fulfilling the criteria in the eMICA model is 5-star hotels. The results showed that 5-star hotels had a higher performance on the eMICA scale than 4- and 3- star hotels, and that 4-star hotels performed better than 3-star hotels. Moreover, descriptive analysis results also support the findings presented in Table 4.

Table 7: Tukey Test Results

Star (I)	Star (J)	Mean Difference (I-J)	Standard Error	Sig. (P)
3	4	-2.528*	0.708	0.001
	5	-4.335*	0.691	0.000
4	3	2.528*	0.708	0.001
	5	-1.807*	0.567	0.005
5	3	4.335*	0.691	0.000
	4	1.807*	0.567	0.005

* The mean difference is significant at the 0.05 level.

Lastly, the existence of a significant difference between hotel categories in satisfying each eMICA criterion was investigated (Table 8). The analysis results yielded a statistically significant difference in e-mail, awards, privacy policy, cookie policy, phone link, restaurants and bars, activity and recreation information, meeting and conference areas, photo album/gallery, map information, weather forecast, local time, special offers and packages, live support, e-bulletin, social media accounts, mobile application information, secure online sales, and best price guarantee ($P<0.05$).

Table 8: Chi-Square Test Results for eMICA Items

Stage	Layer	Website Features	3-Star Hotels (%)	4-Star Hotels (%)	5-Star Hotels (%)	P Value (Chi-Square)
Stage 1: Promotion	Layer 1: Basic Information	Telephone	100	97.94	98.21	0.835**
		Address	94.12	91.75	91.07	0.801*
		Fax	54.90	53.61	46.43	0.471*
		E-mail	96.08	91.75	83.04	0.026*
	Layer 2: Rich Information	About Us	54.90	48.45	52.68	0.719*
		Awards	1.96	9.28	19.64	0.003*
		Privacy Policy	37.25	65.98	92.86	0.000*
		Covid-19 Notification	15.69	27.84	29.46	0.160*
		Cookie Policy	7.84	25.77	61.61	0.000*
Stage 2: Provision	Layer 1: Low Interactivity	Email Link	62.75	74.23	68.75	0.341*
		Phone Link	39.22	51.55	61.61	0.026*
		Rooms and Suites	98.04	96.91	99.11	0.519**
		Restaurants and Bars	41.18	82.47	96.43	0.000*
		Activity and Recreation Information	49.02	57.73	85.71	0.000*
		Meeting and Conference Areas	23.53	75.26	93.75	0.000*
		Photo Album/Gallery	82.35	78.35	62.50	0.008*
		Map Information	90.20	74.23	66.07	0.005*
		Weather Forecast	5.88	21.65	19.64	0.045*
		Local Time	0.00	13.40	8.04	0.020*
		News in the Press	13.73	21.65	25.89	0.219*
	Layer 2: Medium Interactivity	Membership System	7.84	13.40	21.43	0.063*
		Frequently Asked Questions	5.88	8.25	9.82	0.701*
		Special Offers and Packages	17.65	31.96	40.18	0.017*
		Sitemap	9.80	23.71	18.75	0.121*
		In-site Search	11.76	16.49	24.11	0.132*
		Cookie Consent Option	25.49	23.71	33.93	0.230*
	Layer 3: High Interactivity	Video Content	27.45	29.9	33.04	0.753*
		Virtual Tour	5.88	6.19	11.61	0.284*
		Live Support	39.22	11.34	8.93	0.000*
		E-bulletin	19.61	27.84	38.39	0.040*
		Social Media Accounts	62.75	73.20	81.25	0.039*
		Link to Tripadvisor	21.57	17.53	29.46	0.119*
		Mobile Application Information	0.00	4.12	15.18	0.001*
Stage 3: Processing		Online Booking	94.12	93.81	85.71	0.085*
		Secure Online Sales	54.90	76.29	93.75	0.000*
		Best Price Guarantee	13.73	27.84	41.07	0.002*

*Pearson Chi-Square test result
**Fisher's Exact test result

5. CONCLUSION AND DISCUSSION

This study evaluated the websites of hotel businesses registered with the Hotel Association of Türkiye using the eMICA model. The data gathered with the model were then statistically analysed, and evaluation was carried out based on the analysis results.

The study results showed the existence of statistically significant differences between various category hotel websites in meeting eMICA criteria. The maturity level of 5-star hotel websites with respect to the provision of content is higher than the other categories. The majority of the websites evaluated had a high level of success in meeting the criteria in the first stage of eMICA, i.e., basic information about hotel websites.

The high provision level of the online booking feature on all hotel websites indicated that the hotels were inclined to make sales in the virtual environment. Almost all of the hotels offered the rooms and suites feature, where visitors could learn about the hotel facilities. In addition, the restaurant and bar, activity and entertainment information, and meeting and conference areas features, which also inform visitors about the hotel's facilities, are provided at above-average rates by 4- and 5-star hotels.

The hotels had a high degree of success in presenting their social media accounts on their websites, which enables ease of access for potential customers to information about the hotel from many platforms and acquire up-to-date information about the establishment. However, the hotel websites were found to be deficient in the provision of criteria such as membership system, virtual tour, and mobile application, which can facilitate higher interaction with site visitors. Hotel businesses should incorporate all possible features that can provide a greater visitor satisfaction and a better user experience from the website. The researchers believe that adding more up-to-date features to the website may have a positive effect on the purchasing decisions of potential customers.

The study results revealed that hotel businesses used their websites mostly to provide basic information about the hotel. In short, hotels primarily used their websites as a promotional tool. This may negatively affect the purchasing decisions of visitors who cannot experience an adequate degree of satisfaction using the website. The results of our study are consistent with other studies in the literature utilizing the eMICA method (Ateş & Boz, 2015; Maksüdünov, 2019; Özkan & Ulama, 2018; Ting et al., 2013; Ünal & Çelen, 2018).

In order for hotel businesses to optimize customer satisfaction, ensure profitability, and remain in business, they should incorporate up-to-date features on their web pages, share more comprehensive information on the services offered by the hotel, constantly interact with visitors, and maintain lively interactions with customers before and after sales.

The present study differs from other studies employing the eMICA model as a scale for website evaluation as data collection in this study was conducted not through observation, but by using algorithms developed with Python programming language for each criterion in the eMICA model. Consequently, even in studies with large sample sizes, data collection can be performed more expeditiously than by observation, and in studies where data collection is conducted by more than one observer, evaluation variations can be prevented. It is evident that this study can benefit hotel managers and website developers to increase customer satisfaction and profitability in the website development process.

The researchers believe that a similar study conducted at another time with a different sample may yield disparate results. These factors also constitute the limitations of the study.

With its data collection method and improved eMICA model with 4 additional criteria, our study can contribute to future studies that aim to analyze hotel websites. Furthermore, future research in the field can implement data collection via adopting image processing techniques utilizing deep learning algorithms, for each eMICA criterion.

REFERENCES

Ahmed, T. A. A., & Shaker, E. S. (2021). Website evaluation of travel agencies class a in Saudi Arabia and Egypt using extended version of internet commerce adoption model: A comparative study. *International Journal of Economics and Management Engineering, 15*(4), 453-461

Anandkumar, V., & Kumar, A. (2015). Evolving maturity of Malaysian regional tourism organization websites: A longitudinal study using the extended model of internet commerce adoption. *Journal of Tourism, 16*(1), 49-57

Assiri, S. M., & Shamsudeen, S. (2019). Website characterization and evaluation of the five star hotels in Saudi Arabia using advanced content analysis and eMICA framework. *Saudi Journal of Business and Management Studies, 4*(9), 687–697. https://doi.org/10.36348/sjbms.2019.v04i09.001

Ateş, U., & Boz, M. (2015). Konaklama işletmelerinin web sitelerinin değerlendirilmesi: Çanakkale örneği. *Ekonomi İşletme Siyaset ve Uluslararası İlişkiler Dergisi, 1*(1), 63-84

Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the internet—The state of eTourism research. *Tourism Management, 29*(4), 609–623. https://doi.org/10.1016/j.tourman.2008.01.005

Burgess, L., Parish, B., & Alcock, C. (2011). To what extent are regional tourism organisations (RTOs) in Australia leveraging the benefits of web technology for destination marketing and eCommerce? *Electronic Commerce Research, 11*(3), 341–355. https://doi.org/10.1007/s10660-011-9077-1

Cooper, J., & Burgess, L. (2000). A Model of internet commerce adoption (Mica). In S. Rahman & M. Raisinghani (Eds.). *Electronic commerce: Opportunity and challenges* (pp. 189-201). IGI Global. https://doi.org/10.4018/978-1-878289-76-6.ch012

Cristobal-Fransi, E., Daries-Ramon, N., Mariné-Roig, E., & Martin-Fuentes, E. (2017). Implementation of web 2.0 in the snow tourism industry: Analysis of the online presence and e-commerce of ski resorts. *Spanish Journal of Marketing – ESIC, 21*(2), 117–130. https://doi.org/10.1016/j.sjme.2017.06.002

Cristobal-Fransi, E., Daries, N., del Río-Rama, M. de la C., & Fuentes-Tierno, M. G. (2023). The challenge of digital marketing in health tourism: The case of Spanish health resorts. *Quality & Quantity*, 1-29. https://doi.org/10.1007/s11135-023-01744-2

Cristobal-Fransi, E., Daries, N., Serra-Cantallops, A., Ramón-Cardona, J., & Zorzano, M. (2018). Ski tourism and web marketing strategies: The case of ski resorts in France and Spain. *Sustainability*, *10*(8), 2920. https://doi.org/10.3390/su10082920

Cristobal-Fransi, E., Montegut-Salla, Y., Ferrer-Rosell, B., & Daries, N. (2020). Rural cooperatives in the digital age: An analysis of the internet presence and degree of maturity of agri-food cooperatives' e-commerce. *Journal of Rural Studies, 74*, 55–66. https://doi.org/10.1016/j.jrurstud.2019.11.011

Cristobal-Fransi, E., Ramón-Cardona, J., Daries, N., & Serra-Cantallops, A. (2021). Museum in the digital age: An analysis of online communication and the use of e-commerce. *Journal on Computing and Cultural Heritage, 14*(4), 1-21. https://doi.org/10.1145/3464977

Daries-Ramon, N., Cristobal-Fransi, E., & Mariné-Roig, E. (2017). Deployment of restaurants websites' marketing features: The case of Spanish Michelin-starred restaurants. *International Journal of Hospitality & Tourism Administration, 20*(3), 249–280. https://doi.org/10.1080/15256480.2017.1383961

Daries-Ramon, N., Cristóbal-Fransi, E., Martín-Fuentes, E., & Mariné-Roig, E. (2016). Adopción del comercio electrónico en el turismo de nieve y montaña: análisis de la presencia web de las

estaciones de esquí a través del modelo eMICA. *Cuadernos de Turismo, 37*, p. 113. https://doi.org/10.6018/turismo.37.256171

Daries, N., Cristobal-Fransi, E. & Ferrer-Rosell, B. (2020). Implementation of website marketing strategies in sports tourism: Analysis of the online presence and e-commerce of golf courses. *Journal of Theoretical and Applied Electronic Commerce Research 16*(3), 542-561. https://doi.org/10.3390/jtaer16030033

Daries, N., Cristobal-Fransi, E., Ferrer-Rosell, B., & Marine-Roig, E. (2018). Maturity and development of high-quality restaurant websites: A comparison of Michelin-starred restaurants in France, Italy and Spain. *International Journal of Hospitality Management, 73*, 125–137. https://doi.org/10.1016/j.ijhm.2018.02.007

Fernández-Uclés, D., Bernal-Jurado, E., Mozas-Moral, A. & Medina-Viruel, M. J. (2019). The importance of websites for organic agri-food producers. *Economic Research-Ekonomska Istraživanja, 33*(1), 2867-2880. https://doi.org/10.1080/1331677X.2019.1694426

Goi, C. (2007). A review of existing web site models for e-commerce. *The Journal of Internet Banking and Commerce, 12*, 1-17

Kim, I., & Kuljis, J. (2010). Applying content analysis to web-based content. *Journal of Computing and Information Technology, 18*(4), 369. https://doi.org/10.2498/cit.1001924

Lituchy, T. R., & Rail, A. (2000). Bed and breakfasts, small inns, and the internet: The impact of technology on the globalization of small businesses. *Journal of International Marketing, 8*(2), 86–97. https://doi.org/10.1509/jimk.8.2.86.19625

Maksüdünov, A. (2019). Otel web sitelerinin içerik analizi yöntemiyle değerlendirilmesi: Bişkek'te bir araştırma. *Karamanoğlu Mehmetbey Üniversitesi Sosyal ve Ekonomik Araştırmalar Dergisi, 21*(37), 186-196

Meroño-Cerdan, A. L., & Soto-Acosta, P. (2007). External web content and its influence on organizational performance. *European Journal of Information Systems, 16*(1), 66–80. https://doi.org/10.1057/palgrave.ejis.3000656

Meslem, A., & Abderrahim, W. (2022). Website evaluation of luxury hotels in Algeria using advanced content analysis and eMICA model. *Journal of Contemporary Economic Studies, 7*(2), 453-464

Özkan, N., & Ulama, Ş. (2018). Evaluation of web sites of 4 and 5 star accommodation establishments in Marmara region. *Gastroia: Journal of Gastronomy and Travel Research, 2*(2), 64–84. https://doi.org/10.32958/gastoria.436028

Poon, S., & Swatman, P. M. C. (1999). An exploratory study of small business internet commerce issues. *Information & Management, 35*(1), 9–18. https://doi.org/10.1016/s0378-7206(98)00079-2

Ramón-Cardona, J., Daries, N., Cristóbal Fransi, E. & Serra-Cantallops, A. (2022). E-Commerce web content adoption model (EWCAM): An integrated tool for WCA and EMICA models for the tourism industry. *Cuadernos de Turismo, 50*, 279-306. https://doi.org/10.6018/turismo.541951

Ramos, C., & Perna, F. (2009). Information system for tourism activity monitoring and forecasting indicators as an experience for Portugal. *Tourism and Hospitality Research, 9*(4), 277–289.

Richardson, L. (2023). *Beautiful Soup Documentation*. Crummy. https://www.crummy.com/software/BeautifulSoup/bs4/doc/

Ting, P.-H., Wang, S.-T., Bau, D.-Y., & Chiang, M.-L. (2013). Website evaluation of the top 100 hotels using advanced content analysis and eMICA Model. *Cornell Hospitality Quarterly, 54*(3), 284–293. https://doi.org/10.1177/1938965512471892

Ünal, A., & Çelen, O. (2018). Türkiye'deki otel işletmelerinin web sitelerinin değerlendirilmesine yönelik nitel bir araştırma. *Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 21*(40), 607–636. https://doi.org/10.31795/baunsobed.492535

Uzunsakal, E., & Yıldız, D. (2018). Alan araştırmalarında güvenilirlik testlerinin karşılaştırılması ve tarımsal veriler üzerine bir uygulama. *Uygulamalı Sosyal Bilimler Dergisi, 2*(1), 14-28.

Van Slyke, C. (2000). The role of technology clusters in small business electronic commerce adoption. *Proceedings of the Fifth CollECTeR Conference on Electronic Commerce*, Brisbane, December, pp. 8.

Wang, L., Law, R., Guillet, B. D., Hung, K., & Fong, D. K. C. (2015). Impact of hotel website quality on online booking intentions: eTrust as a mediator. *International Journal of Hospitality Management, 47,* 108–115. https://doi.org/10.1016/j.ijhm.2015.03.012

Yeung, T. A., & Law, R. (2004). Extending the modified heuristic usability evaluation technique to chain and independent hotel websites. *International Journal of Hospitality Management, 23*(3), 307–313. https://doi.org/10.1016/j.ijhm.2003.03.001

Zhou, K., & Jia, X. (2018). Research on the website construction of Shanghai a-level tourist attractions based on eMICA model. *Proceedings of the 2018 4th International Conference on Social Science and Higher Education (ICSSHE 2018)*. Atlantis Press. https://doi.org/10.2991/icsshe-18.2018.142