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Article

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Multi-Criteria Decision Making in Travel and Tourism Digitalization: Web-Based Perspective

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Abstract

The knowledge regarding the use of digitization within tourism industry structures among EU countries, as well as its effects and benefits, is still scarce. This study aims to fill this gap by examining, through a multiple criteria analysis, the level of digital platform application focusing on e-booking use as well the role of COVID-19 on the effects of the digitization processes and its perspectives among tourism structures within EU countries. Thus, this study aims to point out the importance of the application of multi-criteria analysis for business decision-making in tourism through the prism of the adoption of digital platforms, that is, online reservation systems, as the dominant model of modern business for tourist companies. By applying multiple criteria and statistical analysis, this study found a high level of adoption of online booking applications within tourism structures among EU countries, thereby highlighting France as the leading economy in the mentioned context.

Keywords: multi-criteria decision-making, tourism, digitization, booking platforms, EU countries

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Introduction

Contemporary trends in the tourism sector emphasize digitization, or the lack of knowledge regarding the type of technology that is suitable for the respective context (Floričić et al., 2023). Tourists today prefer distant destinations and explore alternative offers that are visible on digital platforms, which facilitates the process of making a decision on the choice of travel, while engaging in a wide range of activities (Felicien and Ilagan, 2016). In recent years, significant progress has been evident in the specific domain of tourism, particularly with the platforms and applications for online booking, improving of the travel arranging process (Navío-Marco et al., 2018).

Today, tourism is inextricably linked with the concept of digitization, due to the high level of combination and synergy with information systems, i.e. interactive technology (Kazandzhieva and Santana, 2019). In fact, some authors state that the development of tourism cannot be imagined without the use of digital platforms and therefore define its nature as IT-intensive (Kalia, Mladenović and Acevedo-Duque, 2022). Therefore, e-tourism is regarded as an innovative mechanism that significantly affects the tourist behavior (Bajpai and Lee, 2015).

The development of digital services caused a change in the habits of modern consumers and their interests in the field of tourism and hotel industry. According to reports (Foundation orange, 2016), almost 50% of all global tourism bookings are made online, with 59% of Asian travelers tending to book tourism products "whenever they can" and "wherever they can". WTTC (2020) states that internet travel booking revenue has grown by more than 73% in the last five years. According to Taiminen and Karjaluoto (2015), 20% of Google searches are related to information about a local destination, over 50% of travelers use a computer to book a trip, while 30% of all direct online reservations worldwide are made on mobile devices (tablets and smartphones). According to the authors, 38% of tourists and 57% of business travelers use smartphones for information before their trip, while 87% of global and 85% of US travelers use a mobile device during their trip. These findings affirm the conclusions drawn in the study of Foundation Orange (2016) which points out that there is extensive use of information and data in every phase of travel. In other words, consumers search for information before traveling, compare and check the opinions of other tourists, and then book tickets for transportation, accommodation as well as tickets for sports and cultural events (Guo et al., 2023).

The tourism industry is among the first within the service industry to incorporate mobile applications into the business process as an efficient mechanism in terms of adjusting the offer to consumers of tourist services (Cinar, 2020). The use of digital platforms and mobile applications enables easier distribution of services, transparency in the offer of destinations, a high level of interactive communication, direct contact with consumers, which leads to improving the competitiveness of the destination and generating a personalized experience for consumers in tourism (Rađenović and Marjanović, 2020). Digital platforms caused fundamental changes that are reflected in the reorganization of distribution channels, through the establishment of new opportunities for cooperation between actors on the side of the tourist offer: this system significantly increases the efficiency of e-booking, providing the possibility for consumers in tourism to book a wide range of different services at the same time, i.e. main means of whole travel arrangements (Chang, 2017). In this context, these systems contribute to increased efficiency and better business results in the tourism sector by minimizing operational costs and the implementing efficient practices within hospitality companies (Kaur, 2017).

Unlike other economic branches, tourism by its very nature cannot be compensated by virtual reality (Preveden, 2016). However, the application of digital

technology has significantly contributed to the change in the ways of searching for new destinations, booking accommodation, and thus creating the overall travel experience. Online booking platforms have assumed a very important part of marketing efforts (Jarvinen and Karjaluoto, 2015). Moreover, the use of new technologies was also reflected in the creation of the so-called sharing economy, which after accommodation services found its application in the field of hospitality (Evans, 2011). Bearing all of this in mind, many tourism and hotel companies are not only compensating their web and offline tools with new mobile platforms, but also creating new digital experiences and new business models specifically designed for electronic booking (Wu et al., 2014).

According to the importance of digital platforms for the tourism sector, the aim of this study is to indicate the importance of the application and perspective of e-booking in tourism. Research tend to analyze the representation of online reservations in the tourism industry of European countries by applying statistical and multi-criteria methods. In fact, the purpose of the work is to investigate the application of MCDM methods in tourism, especially with regard to the adoption of e-booking systems, which sheds light on the research question of the work that examines the acceptance of online reservation systems in tourism, with a focus on EU countries. This underlines the importance of multi-criteria decision-making as an important mechanism of predictive analytics that can provide new perspectives in the strategic development of tourism. Despite the fact that digitization is a widely researched area in the existing tourism literature, fewer studies have investigated the importance of online booking systems through the integration of the following variables Guest nights, Guest stays and Guest length of stay at short term accommodation booked via online platforms (Adukaite et al., 2013). In fact, by using an aggregate approach in the integration of the mentioned variables, this study goes beyond previous researches that analyzed the effects of e-booking using individual variables. In an effort to bridge the recognized gap in the literature, this paper addresses the perspectives of e-booking in tourism, performing predictive analytics by collecting large amounts of data through indicators Guest nights, Guest stays and Guest length of stay at short term accommodation booked via online platforms. In this way, the context of e-booking is proposed as one of the most dominant means of travel arrangements in order to understand the general and specific needs of tourists, preferences and behavioral intentions in the age of digitalization. Accordingly, this study extends previous knowledge and proposes a conceptual framework for analyse the indicators that include guest nights, guest stays, and length of stays at short term accommodation booked via online platforms, using the Multi-Criteria analysis. Therefore, a special contribution is the fact that the mentioned methods are not sufficiently represented in the tourism sector (Stevic et al., 2019). The proposed framework contributes to the improvement of theory and practice for sustainable destination management through the creation of an adequate strategy in the domain of information technology and the overall tourist product.

The article is structured as follows: after the introduction, in which the impact of e-booking on the tourism sector is shown, the next section represents methodology, followed by a section related to the analysis of results and discussion. Finally, the paper concludes with a discussion of limitations and suggestions for future research.

Methodology

Methods for Multi-Criteria Decision Making (MCDM) represent an analytical approach that enables decision-makers to evaluate and prioritize alternatives based on multiple criteria and objectives. The goal of multi-criteria decision-making methods is to support

decision-making while simultaneously considering multiple criteria and objectives. The primary objective of the considered methods is to provide a systematic and transparent approach for comparing and ranking alternatives in the decision-making process, taking into account the preferences and priorities of the decision-makers. Yazdani et al. (2019a) created a relatively new CoCoSo approach (Combined Compromise Solution) that integrates the exponentially weighted product model (MEP) with simple additive weighting (SAW). Combining compromise viewpoints is the fundamental component of this approach, since it eventually reconciles the often-conflicting evaluation criteria. The CoCoSo approach gives the decision-maker a summary of potential compromise options. The following stages can be used to demonstrate the CoCoSo method's calculating process (Yazdani et al., 2019):

Phase 1. Defining the initial decision matrix.

Phase 2. Normalization of criteria values.

In the case of beneficial criteria, normalization is performed as follows:

$$r_{ij} = \frac{x_{ij} - \min x_{ij}}{\max x_{ij} - \min x_{ij}}$$

where r_{ij} is a normalized rating of the alternative i in relation to the criterion j , and x_{ij} denotes rating of the alternative i in relation to the criterion j .

Phase 3. Using the CoCoSo technique, which integrates SAW and MEP techniques, in the following ways:

$$S_i = \sum_{j=1}^n r_{ij} w_j$$

$$P_i = \sum_{j=1}^n r_{ij}^{w_j}$$

Where S_i and P_i represent the sum of weight-comparable sequences and weight-multiplied comparable sequences of the alternative i , respectively, and w_j denotes weights of the criterion j . Phase 4. The ranking of the choices that are taken into consideration. The CoCoSo approach employs a relative performance score, k_i , for ranking purposes. It is computed as follows using three aggregate estimated outcomes, k_{ia} , k_{ib} , and k_{ic} :

$$K_i = \frac{1}{3}(k_{ia} + k_{ib} + k_{ic}) + (k_{ia} + k_{ib} + k_{ic})^{\frac{1}{3}}$$

$$k_{ia} = \frac{S_i + P_i}{\sum_{i=1}^m (S_i + P_i)}$$

$$k_{ib} = \frac{S_i}{\min S_i} + \frac{P_i}{\min P_i}$$

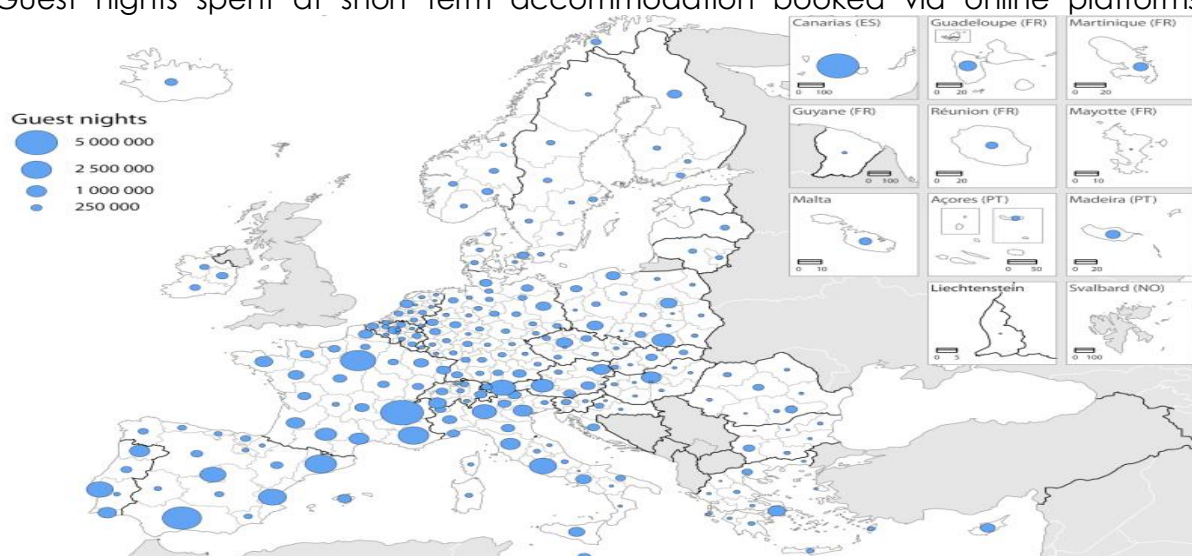
$$k_{ic} = \frac{\lambda S_i + (1 - \lambda)P_i}{\lambda \max S_i + (1 - \lambda)\max P_i}$$

By applying the CoCoSo methodology in this research, the countries of the European Union will be ranked for the years 2018, 2019, 2021 and 2022 based on available data from the Eurostat database. The indicators analyzed are:

- Guest nights spent at short term accommodation booked via online platforms
- Guest stays at short term accommodation booked via online platforms
- Guest length of stay at short term accommodation booked via online platforms

Figure 1

Guest nights spent at short term accommodation booked via online platforms



Source: Eurostat Database

Results

The results of the ranking of countries using the CoCoSo method show that the best ranked country is France based on previously calculated k-index values (Table 1).

Table 1

Final ranking according to K- index calculation (2018)

Alternatives 2018	Si	Pi	Ka	Kb	Kc	K	Final Ranking
Belgium	0.0670	1.2156	0.0297	8.5871	0.3261	3.4176	15
Bulgaria	0.0278	0.9092	0.0217	4.1962	0.2382	1.7644	21
Czechia	0.0981	1.3816	0.0343	11.9575	0.3762	4.6590	12
Denmark	0.0490	1.0974	0.0266	6.6063	0.2915	2.6794	16
Germany	0.3867	2.1816	0.0595	42.0740	0.6530	15.4404	4
Estonia	0.0148	0.7304	0.0173	2.6111	0.1895	1.1437	26
Ireland	0.0765	1.2697	0.0312	9.6298	0.3423	3.8030	14
Greece	0.2199	1.8107	0.0471	24.8149	0.5163	9.3043	7
Spain	0.9636	2.9622	0.0910	101.0094	0.9982	36.1263	2
France	0.9670	2.9659	0.0912	101.3544	1.0000	36.2469	1
Croatia	0.2338	1.8479	0.0482	26.2641	0.5293	9.8226	6
Italy	0.7354	2.7074	0.0798	77.7811	0.8754	28.0034	3
Cyprus	0.0302	0.9265	0.0222	4.4561	0.2432	1.8624	19
Latvia	0.0100	0.6438	0.0152	2.0000	0.1662	0.8986	27
Lithuania	0.0158	0.7466	0.0177	2.7438	0.1939	1.1961	25
Luxembourg	0.1000	1.3926	0.0346	12.1680	0.3795	4.7366	11
Hungary	0.0925	1.3549	0.0335	11.3563	0.3680	4.4388	13
Malta	0.0241	0.8624	0.0205	3.7490	0.2254	1.5906	22
Netherlands	0.1022	1.4010	0.0348	12.4010	0.3822	4.8213	10
Austria	0.1359	1.5423	0.0389	15.9918	0.4267	6.1284	9
Poland	0.2019	1.7521	0.0453	22.9232	0.4968	8.6238	8
Portugal	0.2841	1.9719	0.0523	31.4912	0.5736	11.6869	5

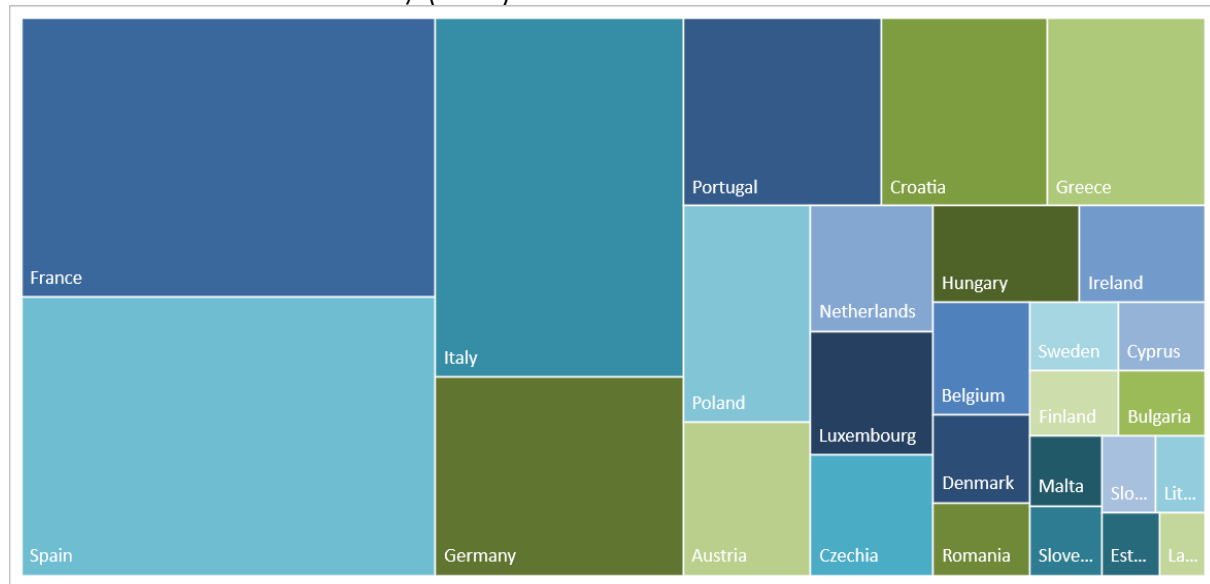
Romania	0.0378	1.0010	0.0241	5.3382	0.2641	2.1993	17
Slovenia	0.0235	0.8575	0.0204	3.6843	0.2240	1.5660	23
Slovakia	0.0174	0.7752	0.0184	2.9482	0.2015	1.2779	24
Finland	0.0293	0.9217	0.0220	4.3679	0.2418	1.8295	20
Sweden	0.0308	0.9408	0.0225	4.5463	0.2470	1.8988	18

Source: Authors' elaboration based on available data

Based on the value of the K index, a tree chart was created that shows the share of individual countries in the overall ranking during 2018, where it can be seen that France, Spain, Italy, Germany, and Portugal have the largest contribution (Figure 2).

Figure 2

Tree chart of K- index density (2018)



Source: Authors' visualization

In 2019, the result did not change. France is still the best ranked country (Table 2).

Table 2

Final ranking according to K- index calculation (2019)

Alternatives 2019	Si	Pi	Ka	Kb	Kc	K	Final Ranking
Belgium	0.0720	1.2465	0.0304	8.0624	0.3330	3.2423	14
Bulgaria	0.0262	0.8915	0.0212	3.5830	0.2318	1.5386	21
Czechia	0.0947	1.3662	0.0337	10.1998	0.3689	4.0364	12
Denmark	0.0443	1.0617	0.0255	5.3952	0.2793	2.2374	17
Germany	0.4080	2.2227	0.0606	38.5099	0.6643	14.2359	4
Estonia	0.0152	0.7374	0.0173	2.3989	0.1901	1.0680	26
Ireland	0.0696	1.2317	0.0300	7.8336	0.3286	3.1566	15
Greece	0.2297	1.8371	0.0476	22.5457	0.5219	8.5297	6
Spain	0.9387	2.9359	0.0893	85.3915	0.9785	30.7739	2
France	0.9802	2.9798	0.0913	89.0348	1.0000	32.0525	1
Croatia	0.2232	1.8189	0.0471	21.9587	0.5157	8.3179	7
Italy	0.7415	2.7151	0.0797	68.0343	0.8729	24.6745	3
Cyprus	0.0301	0.9253	0.0220	3.9706	0.2413	1.6876	20

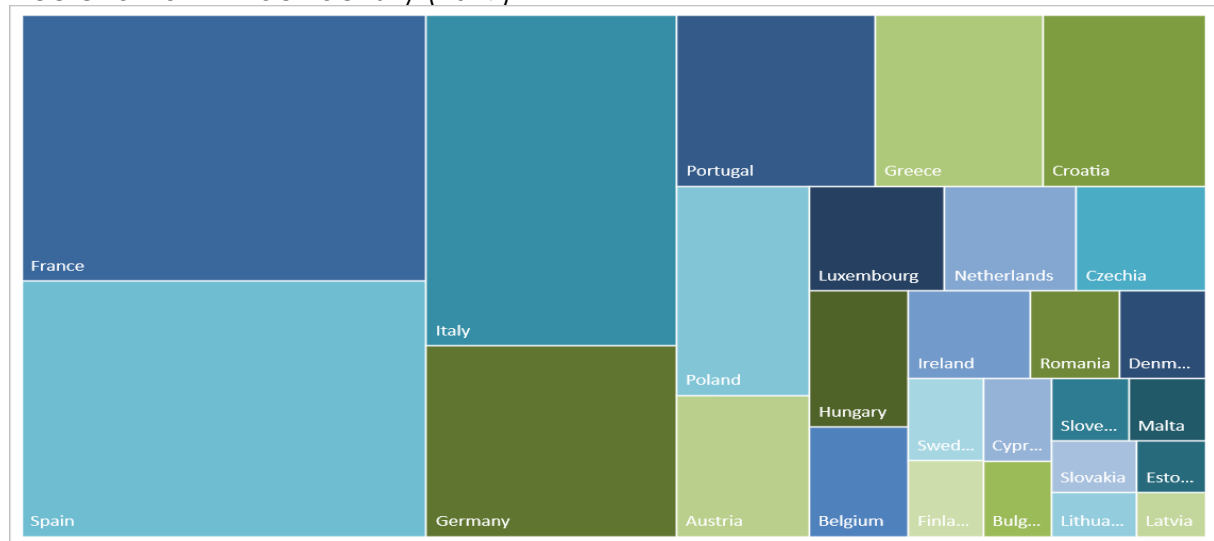
Latvia	0.0116	0.6766	0.0159	2.0000	0.1738	0.9065	27
Lithuania	0.0163	0.7556	0.0178	2.5275	0.1949	1.1196	25
Luxembourg	0.1000	1.3926	0.0344	10.6927	0.3769	4.2189	10
Hungary	0.0938	1.3621	0.0336	10.1139	0.3677	4.0048	13
Malta	0.0238	0.8578	0.0203	3.3264	0.2227	1.4367	23
Netherlands	0.0966	1.3758	0.0339	10.3743	0.3718	4.1011	11
Austria	0.1397	1.5564	0.0391	14.3622	0.4283	5.5651	9
Poland	0.2216	1.8087	0.0468	21.8057	0.5127	8.2609	8
Portugal	0.2795	1.9607	0.0516	27.0274	0.5657	10.1392	5
Romania	0.0464	1.0727	0.0258	5.5936	0.2826	2.3115	16
Slovenia	0.0239	0.8622	0.0204	3.3361	0.2238	1.4414	22
Slovakia	0.0207	0.8212	0.0194	3.0028	0.2126	1.3097	24
Finland	0.0304	0.9334	0.0222	4.0086	0.2434	1.7035	19
Sweden	0.0334	0.9658	0.0230	4.3073	0.2523	1.8201	18

Source: Authors' elaboration based on available data

Tree chart in Figure 3. explicitly indicates that in 2019 the result did not change compared to the previous year, so it can be seen that Germany, Italy and Spain are ahead of Portugal as the leading tourist economies (Figure 3).

Figure 3

Tree chart of K- index density (2019)



Source: Authors' visualization

Table 3. shows that the result in 2021 remained the same, that is, that France still occupies a dominant ranked position among EU countries.

Table 3

Final ranking according to K- index calculation (2021)

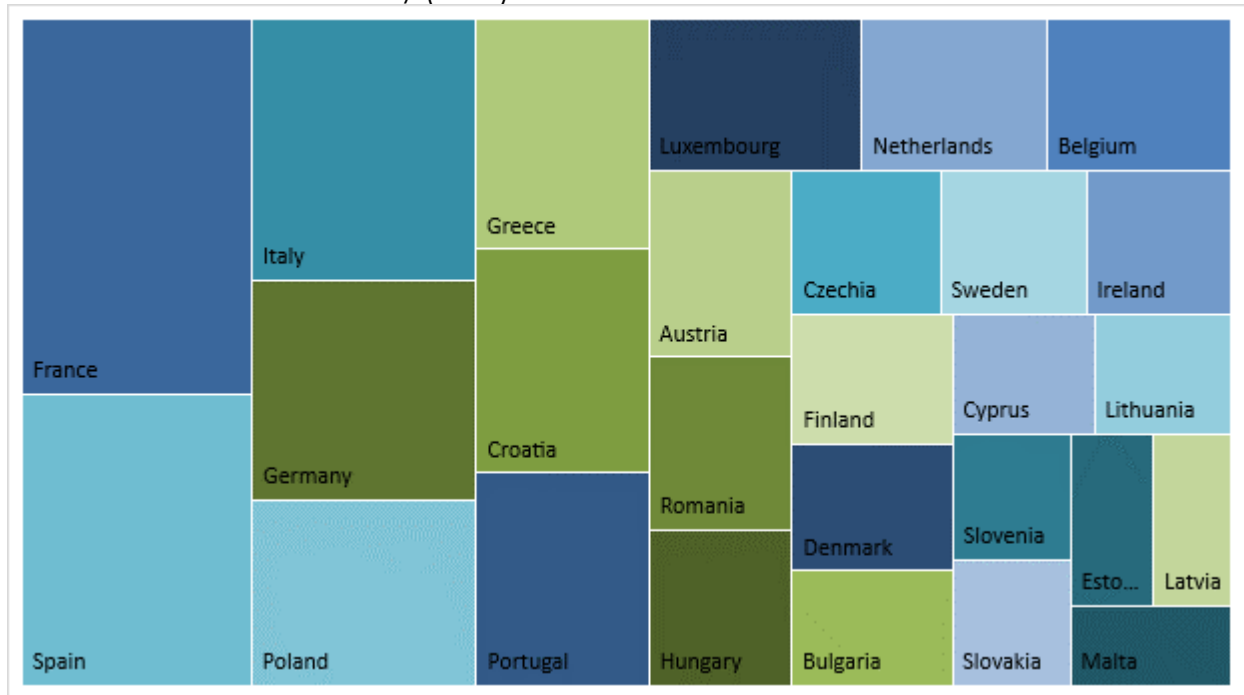
Alternatives2021	Si	Pi	Ka	Kb	Kc	K	Final Ranking
Belgium	1.4377	2.7780	0.0262	16.4643	0.1392	5.9348	11
Bulgaria	0.4958	1.9245	0.0150	6.4041	0.0799	2.3638	19
Czechia	0.6770	2.1913	0.0178	8.4163	0.0947	3.0851	16
Denmark	0.6809	2.1324	0.0175	8.4111	0.0929	3.0795	17
Germany	7.6639	4.6713	0.0767	80.1496	0.4072	28.2353	4
Estonia	0.1717	1.4541	0.0101	2.8099	0.0537	1.0730	25
Ireland	0.6879	2.1595	0.0177	8.5017	0.0940	3.1130	15
Greece	4.2303	3.8818	0.0504	45.2204	0.2678	16.0279	5
Spain	15.3052	5.8825	0.1317	157.4720	0.6994	55.2063	2
France	23.3911	6.9019	0.1883	239.0975	1.0000	83.6525	1
Croatia	4.1204	3.8124	0.0493	44.0684	0.2619	15.6218	6
Italy	10.6785	5.2896	0.0992	110.7594	0.5271	38.9246	3
Cyprus	0.4995	1.8416	0.0145	6.3784	0.0773	2.3496	20
Latvia	0.1310	1.3308	0.0091	2.3098	0.0483	0.8894	26
Lithuania	0.2621	1.6470	0.0119	3.8585	0.0630	1.4535	21
Luxembourg	0.1000	1.3926	0.0093	2.0464	0.0493	0.7995	27
Hungary	0.7870	2.2815	0.0191	9.5846	0.1013	3.4995	13
Malta	0.2334	1.4111	0.0102	3.3945	0.0543	1.2765	22
Netherlands	1.5514	2.8263	0.0272	17.6381	0.1445	6.3475	9
Austria	1.5570	2.7666	0.0269	17.6488	0.1427	6.3470	10
Poland	3.8811	3.9322	0.0486	41.7654	0.2579	14.8297	7
Portugal	3.7559	3.6751	0.0462	40.3209	0.2453	14.3076	8
Romania	0.9003	2.4591	0.0209	10.8513	0.1109	3.9539	12
Slovenia	0.2191	1.5293	0.0109	3.3399	0.0577	1.2641	23
Slovakia	0.1982	1.5030	0.0106	3.1118	0.0562	1.1822	24
Finland	0.5690	2.0952	0.0166	7.2641	0.0879	2.6757	18
Sweden	0.7603	2.1966	0.0184	9.2532	0.0976	3.3782	14

Source: Authors' elaboration based on available data

The tree chart show that France, Germany, Spain, Italy and Poland have the biggest contribution to the overall ranking in 2021 (Figure 4).

Figure 4

Tree chart of K- index density (2021)



Source: Authors' visualization

In 2022, the result did not change. France is still the best ranked country (Table 4).

Table 4

Final ranking according to K- index calculation (2022)

Alternatives 2022	Si	Pi	Ka	Kb	Kc	K	Final Ranking
Belgium	1.121	3.1189	0.0262	13.5156	0.1650	4.9570	11
Bulgaria	0.389	2.1246	0.0153	5.0775	0.0964	1.9253	20
Czechia	0.807	2.7735	0.0220	9.9454	0.1387	3.6807	13
Denmark	0.598	2.4962	0.0189	7.5552	0.1194	2.8221	17
Germany	5.745	5.4537	0.0707	63.9891	0.4454	22.7647	4
Estonia	0.205	1.6159	0.0110	2.7748	0.0691	1.0797	25
Ireland	0.683	2.6138	0.0202	8.5268	0.1274	3.1716	15
Greece	3.632	4.6722	0.0521	41.1299	0.3284	14.7263	6
Spain	12.242	7.0279	0.1227	133.7007	0.7731	47.1975	2
France	17.006	7.8450	0.1587	184.4924	1.0000	64.9657	1
Croatia	3.109	4.4319	0.0472	35.4421	0.2976	12.7217	8
Italy	9.909	6.5482	0.1045	108.6921	0.6586	38.4409	3
Cyprus	0.401	2.1430	0.0155	5.2264	0.0976	1.9790	19
Latvia	0.178	1.5200	0.0102	2.4219	0.0642	0.9487	26
Lithuania	0.259	1.7906	0.0124	3.4654	0.0781	1.3349	24
Luxembourg	0.100	1.3926	0.0092	2.0000	0.0580	0.7913	27
Hungary	0.937	2.9287	0.0238	11.4357	0.1501	4.2143	12
Malta	0.277	1.8475	0.0129	3.7008	0.0810	1.4217	23

Netherlands	1.133	3.1329	0.0264	13.6478	0.1661	5.0043	10
Austria	1.705	3.6106	0.0330	20.0316	0.2081	7.2739	9
Poland	3.367	4.5458	0.0496	38.2247	0.3125	13.7022	7
Portugal	3.673	4.6891	0.0525	41.5811	0.3307	14.8852	5
Romania	0.764	2.7159	0.0214	9.4552	0.1347	3.5046	14
Slovenia	0.338	2.0063	0.0142	4.4585	0.0897	1.6994	21
Slovakia	0.283	1.8660	0.0130	3.7777	0.0820	1.4500	22
Finland	0.498	2.3240	0.0172	6.3708	0.1086	2.3940	18
Sweden	0.616	2.5229	0.0192	7.7592	0.1212	2.8956	16

Source: Authors' elaboration based on available data

In contrast to the previous three chart, we can see in Figure 5. that Poland has stagnated in 2022 and that Portugal is ahead of it and Greece as one of the most important tourism powers.

Figure 5

Tree chart of K- index density (2022)



Source: Authors' visualization

Discussion

In this research, we aimed to examine the level of adoption of digital systems, that is, online booking platforms within the tourism industry among EU countries, as well as the effects of digitization use on tourism development using the multiple criteria decision-making method. By applying CoCoCo approach, this study highlights the importance of a multi-criteria decision-making approach among service providers within tourism sector. The findings demonstrate that digital platforms implementations appears as imperative in tourism industry among EU countries, which is consistent with those of previous studies (Dredge et al., 2019; Carlisle et al., 2023). Further, the results explicitly

indicate that France, in addition to achieving expansive growth in the implementation of interactive systems, has in recent years taken the leading position in the application of digital platforms as the dominant mechanism of modern business in the service sector among EU countries. One of the reasons can be found in the argument of the authors Cetté et al. (2022) who point out that France, as a leading economy relatively early on, in the 20th century, initiated networking within the service sector, which stimulated the process of digital transformation of tourist companies at the national level. The obtained findings are in accordance with the arguments of authors Guedes et al. (2023), who state that France, as a leading tourist power, invests the greatest efforts in the direction of the expansion of digitization as the fourth industrial revolution and strategically adapts to the new business conditions determined by the strong influence of interactive systems. In addition to the development of an efficient and sustainable digital infrastructure, the aforementioned caused the tendency of the digitally qualified population to grow, which was reflected in the dissemination of tourist trips and increasingly strong individual intentions in the direction of using the online reservation system as a leading distribution channel. Another important finding of the research refers to the adoption of digital innovations both before and after the Covid-2019 pandemic. In fact, considering tourism in the era of digitization, the authors advocate the idea that the tourism industry has suffered a strong impact of global proportions, which, unlike all previous crises, is distinctive in the sense that it emphasizes the health aspect as an essential determinant of the intention of tourist travel in the direction of the diffusion of the application of digital systems against social interaction among users of tourist services. In this regard, the obtained results indicate a growing tendency to use online reservation systems during and after the pandemic period, which implies changes in the pattern of behavior in tourism and the transformation process of the organizational culture of tourist companies as a logical consequence of the global crisis, which is in line with Ministère de l'Économie (2021). The results further indicate that in 2021 the structure of the countries has changed in such a way that Portugal becomes more dominant compared to Poland in terms of e-booking. This is supported by the reports of the International Trade Administration (2023) that the improvement of digital skills becomes a national priority in Portugal from 2020. In this regard, Portugal implemented a national action plan for the digital transition in 2020, prioritizing digital inclusion and training of people together with the digital transformation of enterprises, which is in line with the results of the research in 2021.

Conclusion

Digital platforms and technological innovations are engines of development and their influence is present everywhere, especially in the field of the service sector and therefore in the digital future of the tourism industry (Zsarnoczky, 2018). From the consumer's point of view, electronic booking provides multiple benefits and is extremely important, especially in terms of saving time and money, while at the same time it is easy to use. On the other hand, digital platforms for electronic reservations can represent a key advantage for travel service providers, especially if a specific business system manages it correctly. In other words, the digital era significantly influences the global economy, including the service industry at the same time, and therefore electronic reservation platforms become an indispensable part of the business of various hotel systems, which makes them one of the most significant aspects of the modern age of tourism. The industry of electronic reservations is characterized by progressive expansion, while contemporary trends predict an increase in the use of mobile reservation applications by future users (Ozturk et al.,

2016). According to all the above, it is evident that actors in the tourism industry will increasingly depend on digital booking platforms as the main distribution channel. Previous literature dealt with the research and comparison of multiple online booking channels with a focus on specific destinations (Jasrotia et al., 2019) as well as the factors that influence consumers to make an e-booking. However, this paper focused on the perspective of electronic reservation in tourism using multi-criteria decision-making. The existing literature reveals that MCDM is still insufficiently researched in the field of tourism, compared to its application in the field of digitization. When it comes to its use in the common contexts of digitization and tourism, it is practically neglected. This article provided the response and evidences on the research question from which we started in the work, which problematizes the acceptance of online reservation systems in tourism using MCDM, focusing on EU countries. This reflects the contribution of this paper, in fact it is multifaceted. First, it adds a theoretical framework on new trends in the tourism sector, where it investigates: (i) the application of MCDM in tourism in general and (ii) its use for evaluating the prospects of electronic reservations in the context of tourism within EU countries and that (iii) France has in recent years taken the leading position in the application of digital platforms as the dominant mechanism of modern business in the service sector among EU countries. The practical contribution is in the use of the MCDA method in multiple contexts of tourism, where their applicability is shown on the example of travel arrangements, specifically accommodation. Providing an insight into contemporary tendencies related to online booking, it represents an excellent foundation for future research by providing guidelines and recommendations for planning digital strategy development in tourism. Furthermore, the function of digital platforms as service providers in tourism can help managers to optimize their marketing efforts towards generating extraordinary travel experiences.

This study aimed to synthesize and conceptualize, through a systematic literature review, the current state of knowledge about digitization in the tourism and hospitality sector. However, in order to fully understand the potential of electronic reservations in the tourism industry, more extensive research is needed. In this regard, it is necessary to conduct additional studies in order to provide new knowledge regarding the application of interactive multimedia systems with the aim of more efficient management of tourist services in the digital era of tourism. Future research in this area should include a hybrid multicriteria structure that incorporates different MCDM methods on a larger sample. In addition, future research should consider the possibility of including additional variables related to the quality of services provided in tourism through digital platforms, all with the aim of examining consumer behavioral intentions.

Regardless of numerous contributions, the conducted research faces certain limitations. Despite the efforts to ensure as credible a sample as possible, we are of the opinion that a larger sample would allow a greater possibility of viewing and generalizing the overall results of the research. Also, the research is limited by the use of selected indicators, since the use of other indicators would give different results.

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