

Original Paper

doi: [10.15826/recon.2018.4.1.005](https://doi.org/10.15826/recon.2018.4.1.005)**Indicators of tourism development of the Serbian Danube region****Dobriša Lukić^a, Siniša Berjan^b, Hamid El Bilali^c**^a Alfa BK University, Belgrade, Serbia; dobriladjerdap@gmail.com^b University of East Sarajevo, Faculty of Agriculture, Sarajevo, Bosnia and Herzegovina; email: sinisaberjan@yahoo.com^c Sustainable Agriculture, Food and Rural Development Department, International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM-Bari), Valenzano (Bari), Italy; hamid.elbilali@boku.ac.at**ABSTRACT**

Protected natural area in the Danube region covers 107,200 hectares and includes two national parks, two nature parks, one place of outstanding natural beauty, five special natural reserves, twenty-five nature monuments, and two sites of international significance included in the Ramsar list. However, only 140 immovable and 374 movable cultural objects are officially registered. There are 31 cultural objects of exceptional importance and national significance and 89 objects of great importance and regional significance. The objects with this status are protected by the state. Two sites are on the preliminary UNESCO World Heritage list. This paper discusses the potential of tourism industry in the Serbian Danube Region and the prospects of its further development. We outline the current state of tourism industry and describe the geographical location of the region, its natural and anthropogenic resources, and accommodation capacities. We analyse such data as the number of tourists and the number of overnight stays by municipalities in 2016, and the average length of stay. The indicators used are the functionality coefficient, the capacity utilization and the intensity of functionality. The conclusion is drawn that the tourism potential of the Serbian Danube Region is not fully realized and that its development should be at a much higher level, given the increasingly important role of the region as a major tourist destination in Serbia.

KEYWORDS

Serbia, Danube Region, indicators, development, tourism

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Индикаторы развития туризма в придунайских районах Сербии**Д. Лукич^a, С. Берьян^b, Х. Эл Билали^c**^a Алфа БК Универзитет, Белград, Сербия; dobriladjerdap@gmail.com^b Восточно-Сараевский университет, Лукавица, Босния и Герцеговина; email: sinisaberjan@yahoo.com^c Международный центр средиземноморских агрономических исследований, Валенцано, Италия; email: hamid.elbilali@boku.ac.at**РЕЗЮМЕ**

Охраняемая природная территория в Дунайском регионе занимает 107 200 гектаров и включает в себя два национальных парка, два природных парка, одно место выдающейся природной красоты, пять специальных природных заповедников, двадцать пять памятников природы и два объекта международного значения, включенные в список Рамсарской конвенции. Однако официально зарегистрировано только 140 недвижимых и 374 передвижных культурных объекта. Есть 31 культурный объект исключительной важности и национального значения и 89 объектов, имеющих большое значение и региональное значение. Объекты с этим статусом защищены государством. Два объекта находятся в предварительном списке Всемирного наследия ЮНЕСКО. В данной статье обсуждается потенциал индустрии туризма в регионе сербского Дуная и перспективы его дальнейшего развития. Мы описываем текущее состояние индустрии туризма и географическое положение региона, его природные и антропогенные ресурсы, а также гостиничные мощности. Мы анализируем такие данные, как количество туристов и количество ночевки в муниципалитетах в 2016 г., а также средняя продолжительность пребывания. Используемыми индикаторами являются коэффициент функциональности, использование мощности и интенсивность функциональности. Сделан вывод о том, что туристический потенциал сербского Дунайского региона не полностью реализован и его развитие должно быть на гораздо более высоком уровне, учитывая все более важную роль региона как важного туристического направления в Сербии.

КЛЮЧЕВЫЕ СЛОВА

Сербия, Дунайский регион, показатели, развитие, туризм

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Introduction

The Serbian Danube Region is a destination that is gaining more and more importance on the tourist market of Serbia. The region offers a variety of diverse tourist attractions ranging from natural parks and reserves to cultural heritage sites [1]. However, the abundance of resources does not always guarantee commercial success [2]. Therefore, it is important to define the direction for development of tourism in the region, to achieve the synergy of all the key factors, and to cooperate with other local partners to promote the Serbian Danube Region as a major tourist destination. The goal is to boost revenues of the tourism industry by increasing the number of tourists and the number of overnight stays. The growth in the tourism sector would create more jobs, reduce the outflow of the population to other regions and improve the living standards of the local community [3].

Theoretical framework

Until the second half of the twentieth century, the data on tourist arrivals, number of beds and the average length of stay as well as the number of people employed in tourism and hospitality industry had been the key indicators for assessment of tourism development in specific destinations [4]. Later, in order to determine the impact of tourism on local economies, the research started to focus on the ratio of accommodation capacities and the number of local population in specific destinations [5; 6]. The first to apply this type of methodology was French geographer Pierre Defert, who proposed the index of tourist function in 1967. French researcher Rene Baretje in 1978 improved Defert index and brought it in agreement with the spatial unit of destination. Numerous studies introduced other indicators, in addition to Defert-Baretje's index, for measuring the tourist intensity. For example, Polish researchers used Charvat's index to show the development of tourism as a result of urbanization. The intensity of tourism can also be determined with the help of Schneider's index, which is often referred to as the index of tourist traffic intensity [7].

Description of the region

The Serbian Danube Region extends between 45°48'39" and 44°12'48" north latitude and 18° 51'9" and 22°40'18" east longitude. This region is located in Central Europe in the southern part of the Pannonian Basin, in the north of the Republic of Serbia [8]. The Danube Region in

Serbia covers 15,755 km², which is about 17.8% of its total area. According to the last census, there are 2,957,577 people in 499 settlements, that is, about 40.7% of the total population of Serbia. The average population density is 125 inhabitants per km². The region comprises 24 local self-government units that have a direct access to the Danube. The territory can be divided into the following parts:

- the upper Danube Region, the area located along the border with Croatia from Batina (Bezdan) to Bačka Palanka. Recently, this region has significantly changed its spatial and functional characteristics;

- the central Danube Region, the area from Bačka Palanka to Ram, which includes the largest and most important centres in Serbia. This region has retained its previous characteristics and does not require any changes in the planning and arranging of its territory;

- the lower Danube Region, the area from Ram to Prahovo, located on the border with Romania. This region holds considerable potential in the sphere of trans-border cooperation [9].

The Serbian Danube Region comprises 107,200 hectares of protected natural area, which makes it an ecological corridor of international significance. The protected areas include the following:

- 2 national parks: Fruska Gora and Djerdap;
- 2 nature parks: Tikvara and Begečka jama;
- Area of unique natural beauty: Veliko ratno ostrvo;

- 5 natural reserves: Gornje Podunavlje, Karadjordjevo, Bagremara, Koviljsko-Petrovaradinski rit and Deliblatska peščara;

- 25 natural monuments covering over one hectare of area: Stari park near Sonta, Park čelarevskog dvorca, Kamenički park, Dvorska bašta park, Mačkov sprud, Ivanovačka ada and Šalinački lug;

- According to the Convention on Wetlands, Gornje Podunavlje and Labudovo okno are registered as sites of international importance for wetland habitats of bird species [10; 11].

Within the Serbian Danube Region, there are areas that enjoy the status of internationally protected areas and those with the candidate status: for example, Gornje Podunavlje and Labudovo okno are already included in the list of Ramsar sites, while Koviljsko-Petrovaradinski rit and Donje Podunavlje are awaiting to be approved. Such areas as Gornje Podunavlje, Deliblatska

peščara and Djerdap have the status of recognized biosphere reserves within the UNESCO's *Man and the Biosphere* (MAB) Programme. Djerdap National Park is covered by the Framework Convention on the Protection and Sustainable Development of the Carpathians. Serbia has also submitted nomination proposals for Deliblatska peščara and Djerdap National Park to be included into the World Heritage List on the basis of the Convention on the Protection of the World Cultural and Heritage Site [10].

There are 1,186 objects of cultural significance in the Serbian Danube Region. However, only 140 immovable and 374 movable cultural objects are officially registered. There are 31 cultural objects of exceptional importance and national significance and 89 objects of great importance and regional significance. The objects with this status are protected by the state. The town of Bač and Smederevo fortress with its surroundings have been on the preliminary UNESCO World Heritage list since 2010. All these natural and anthropogenic resources of the Serbian Danube Region are a part of the European heritage, which can be

used as the starting point for their promotion and marketing as tourist attractions [11].

The peculiar feature of tourism in the Serbian Danube Region is the number and diversity of the natural and anthropogenic landmarks concentrated in a relatively small territory. The problem that needs to be addressed is the low level of their attractiveness for tourists. Moreover, tourists' awareness about these spots is also low [12]. It is known that the Danube is one of the most popular river boat destinations: it ranks first in the world by the number of tourists that visit it on boat cruises. In 2008, out of 380,000 German and Austrian tourists that travelled on international tourist boats, only 51,000 stopped in Belgrade [13]. On the one hand, there are fortresses such as Kalemegdan and Petrovaradin, whose promotion is ineffective; on the other hand, there are also fortresses that remain largely unknown to tourists. The most attractive cultural landmark in the region is the archaeological park Viminacium. Another example of successful promotion is Lepenski Vir: since 2012, the efficient marketing campaign has made it much more interesting for tourists.

Table 1

The region's population by municipalities (data of the 2011 census)

Municipality	Surface area in sq. km	Populated places	Population	People per sq. km	District
Serbia	88,509	6,158	7,258,753	–	–
Belgrade	3226	157	1,647,490	514	–
Apatin	380	5	29,500	84	West Backa
Odzaci	411	9	30,202	73	
Sombor	1216	16	87,539	74	
Bela Crkva	353	14	17,912	51	South Banat
Kovin	730	10	34,990	48	
Pancevo	756	10	12,3021	163	
Novi Sad	699	16	333,268	477	South Backa
Backa Palanka	579	14	55,898	97	
Bac	365	6	14,415	39	
Backi Petrovac	158	4	13,418	85	
Beocin	185	8	15,589	84	
Sremski Karlovci	51	1	8,797	172	
Titel	261	6	16,070	61	
Zrenjanin	1327	22	123,536	93	Central Banak
Indjija	385	11	47,818	124	Srem
Stara Pazova	350	9	70,333	200	
Kladovo	629	23	21,142	34	Southern and Eastern Serbia
Majdanpek	932	14	19,854	21	
Negotin	1,090	39	38,030	35	
Pozarevac	477	27	73,975	156	Branicevo
Veliko Gradiste	344	26	18,956	55	
Golubac	367	24	8,654	25	
Smederevo	484	28	107,170	223	Podunavlje (Danube Basin)

Source: Statistical Office of the Republic of Serbia.

Tourist infrastructure and tourist traffic in the Serbian Danube Region

There is currently no adequate record of accommodation in Serbia and it is not possible to give a complete overview of accommodation facilities and complementary accommodation facilities. Although many towns and municipalities on the Danube hold a great potential for the development of tourism, they have a poor tourist infrastructure [14]. In our analysis we are using the data provided by the Statistical Office of the Republic of Serbia.

As statistics show, in 2016, 1,250,308 tourists arrived in the Serbian Danube Region and spent 2,647,347 nights. The average length of stay of domestic tourists was 2.3 days, while foreign tourists stayed for 2 days. Interestingly enough, twice as many foreign tourists as domestic ones visited the region in the given period.

In 2016, 299 accommodation facilities were registered in the Serbian Danube Region. These

facilities offer 15,688 rooms and 33,176 beds, with 31,827 permanent and 1,349 extra beds (Table 2). Accommodation services are predominantly provided by hotels.

There are 138 hotels in the Serbian Danube Region, all of them categorized. Hotels of a lower category have 8,868 rooms and 15,688 beds. In the region, there are 5 five-star hotels, 38 four-star hotels, 26 three-star hotels, 14 two-star hotels and 4 one-star hotels. There are also two apartment hotels (a five-star and a four-star). As for garni hotels, there is one five-star, 18 four-star, 25 three-star, 4 two-star, and a one-star. In addition to the hotels, the Serbian Danube Region also has one boarding house, 3 motels, 61 overnight stays, 9 apartments, 17 inns with accommodation, 3 spa centres, 2 mountain huts, 3 children's and youth resorts, 57 hostels, 4 camps, and a car for sleeping. There are seven other accommodation facilities, including campsites, hunting lodges and huts, tourist resorts [15].

Table 2

Tourist accommodation capacities in the Serbian Danube Region in 2016

Municipality	Permanent establishment	Available rooms	Bed places	Permanent beds	Spare beds
Belgrade	149	8,047	15,389	14,695	694
Apatin	5	269	610	604	6
Odzaci	4	28	56	56	0
Sombor	9	233	630	613	17
Bela Crkva	4	346	1,016	1,011	5
Kovin	1	32	130	130	0
Pancevo	5	29	78	70	8
Novi Sad	58	4,064	9,129	8,943	186
Bac	2	14	33	33	0
Backi Petrovac	0	93	197	197	0
Backa Palanka	7	113	228	207	21
Beocin	2	36	64	61	3
Sremski Karlovci	3	129	282	268	14
Titel	1	41	93	93	0
Zrenjanin	12	323	674	654	20
Indjija	4	98	210	199	11
Stara Pazova	6	160	394	314	80
Kladovo	4	424	1,173	1,064	109
Majdanpek	2	361	736	716	20
Negotin	4	203	530	510	20
Smederevo	4	66	129	128	1
Golubac	2	84	242	191	51
Veliko Gradiste	4	338	835	808	27
Pozarevac	7	157	318	262	56
Total	299	15,688	33,176	31,827	1,349

Source: Statistical Office of the Republic of Serbia.

Hotels are well-equipped to accommodate large tourist groups as well as conference guests. However, the average occupancy rate in the Serbian Danube Region is low and, therefore, hotels' annual revenues are quite modest [14]. The largest number of tourists come to Belgrade and Novi Sad. Thus, it is the hotel industry in these areas that has the greatest impact on economy. For more balanced development of tourism industry in the Serbian Danube Region it is necessary to build many more facilities for accommodation of tourists in other parts of the region.

The number of foreign tourist arrivals in 2016 was 885,672 or 70.8% of the total number of arrivals. Foreign tourists made 1,808,924 overnight stays, which is 68.3% of the total number of overnight stays in the Danube Region (Table 3). The large proportion of foreign tourists indicate the increasing importance of foreign tourism for the development of the region. The absolute values of the tourist traffic as well as the region's participation in the overall tourist traffic of Serbia are likely

to increase in the future due to the region's significant natural potential and the size of its territory. The current data indicate the growth of tourism industry and the systemic approach applied to tourism development and management by the authorities of the Serbian Danube Region. At the moment, the leading municipalities in this respect are Belgrade, Novi Sad, Kladovo, Majdanpek and Veliko Gradište.

Municipalities which have the smallest tourist traffic are also the most underdeveloped. These include Odžaci, Bač, Titel and Pančevo. Thus, the local trend contradicts the global pattern in which the share of family business in tourism, especially in the domain of accommodation services, is becoming increasingly important [16]. Encouraging the construction of facilities in the private sector seems to be a very suitable development option, which could improve the poor social conditions of the local population and compensate for the lack of investment in tourism and hospitality management in Serbia.

Table 3

Tourists and overnight stays in 2016

Municipality	Tourists			Nights spent			Average number of nights spent	
	Total	Domestic	Foreign	Total	Domestic	Foreign	Domestic	Foreign
Belgrade	913,150	176,087	737,063	1,867,150	406,674	1,460,476	2.3	2.0
Apatin	7,007	5,570	1,437	52,035	46,875	5,160	8.4	3.6
Odžaci	58	49	9	319	241	78	4.9	8.7
Sombor	11,271	7,369	3,902	21,548	14,058	7,490	1.9	1.9
Bela Crkva	1,186	1,143	43	8,024	7,929	95	6.7	2.2
Kovin	2,520	2,358	162	8,915	8,285	630	3.5	3.9
Pancevo	1,190	670	520	2,310	1,300	1,010	1.9	1.9
Novi Sad	174,489	67,808	106,681	360,578	118,956	241,622	1.8	2.3
Bac	547	215	332	1,346	337	1,009	1.5	3.0
Backi Petrovac	2,708	1,459	1,249	5,386	2,456	2,930	1.7	2.3
Backa Palanka	3,310	1,338	1,972	6,804	2,725	4,079	1.9	2.0
Beocin	1,982	1,601	381	4,700	3,235	1,465	2.0	2.0
Sremski Karlovci	7,219	5,059	2,160	12,926	8,181	4,745	1.6	2.2
Titel	558	473	85	1,444	1,192	252	2.5	3.0
Zrenjanin	15,261	8,926	6,335	54,085	31,126	22,959	3.5	3.6
Indjija	2,503	1,340	1,163	4,762	1,927	2,835	1.4	2.4
Stara Pazova	12,053	6,308	5,745	32,986	16,949	16,037	2.7	2.8
Kladovo	25,651	21,719	3,932	50,187	42,219	7,968	1.9	2.0
Majdanpek	24,774	20,023	4,751	44,245	33,635	10,610	1.7	2.2
Negotin	4,971	4,492	479	14,043	12,715	1,328	2.8	2.8
Pozarevac	13,269	11,004	2,265	30,164	24,839	5,325	2.3	2.4
Veliko Gradište	17,891	15,755	2,136	52,861	46,378	6,483	2.9	3.0
Golubac	3,186	2,470	716	4,540	3,606	934	1.5	1.3
Smederevo	3,554	1,400	2,154	5,989	2,585	3,404	1.8	1.6
Total	1,250,308	364,636	885,672	2,647,347	838,423	1,808,924	2.3	2.0

Source: Statistical Office of the Republic of Serbia.

Methodology

This paper analyses indicators of tourist functions that can help determine the intensity of tourism and its development in a particular destination. The analysis of four indicators is applied to determine the region's importance and participation in the overall tourist offer of Serbia. In order to present the tourist development of the region, we analysed the following indicators as of 2016: the length of stay of tourists, the functionality coefficient, the capacity utilization and the intensity of functionality [17].

Length of stay (*LS*) is the ratio of the number of overnight stays (*NO*) to the number of tourists (*NT*):

$$LS = \frac{NO}{NT}.$$

Functionality coefficient (*FC*) is the ratio of number of beds (*NB*) to the population number (*PN*):

$$FC = \frac{NB \cdot 100}{PN}.$$

Capacity utilization (*CU*) is the ratio of the number of overnight stays (*NO*) to the number of beds (*NB*) during the year. This indicator allows us to assess the profitability of accommodation facilities:

$$CU = \frac{NO \cdot 100}{NB \cdot 365}.$$

If the capacity utilization is higher than 60%, the business is profitable; if it ranges between 40% and 60%, then the business is able to cover its costs to stay afloat; and if under 40%, the business is not profitable [17].

The intensity of functionality refers to the volume of tourist traffic in the given location within a certain time period. It can be measured in terms of space, the number of local population or the size of accommodation capacities [17]. In this paper, we measure this indicator by using the population size:

$$IF = \frac{NT \cdot 100}{PN},$$

where *IF* is the intensity of functionality; *NT*, the number of tourists; and *PN*, the local population [7].

Results and discussion

The results of research show that the Serbian Danube Region is a well-established destination

on the tourist market, which is reflected in the number of tourist visits throughout the year. The turnout is particularly intense during the summer months. We should take into consideration that an increase in the number of visitors in general could lead, in addition to positive economic effects, to the decline in the quality of tourist services and excessive pressure on the capacities of certain sites.

As Table 4 illustrates, the length of tourist stays in 2016 was quite short – on average two days. This fact can be explained by the poor state of tourism and hospitality infrastructure in Serbia, for example, the lack of available rooms and beds, accompanied by the decline in the population's purchasing power and the rising prices of services. The only exception from this trend is Odžaci, in which tourists' average length of stay was about 18 days.

The functionality coefficient for the entire region is only 1.12% due to the small number of available beds. However, even if the actual number of beds was increased, we would still have a low coefficient of functionality. This means that we should also work to improve the overall tourist offer in the region. A slightly better picture in this indicator is found in Djerdap, Sombor and Bela Crkva. In these areas, the functionality coefficient is significantly higher than the average values for the whole region – over 5% – due to better accommodation capacities. It is also obvious that the local population in these areas does not suffer from intensive construction of tourist infrastructure, which is of great importance for the sustainable development of the whole region. It is recommended that in the municipalities specializing in tourism the ratio of number of beds to the number of inhabitants should be 1.5:1 [18]. The capacity utilization indicator reflects the level of economic development and profitability. Unfortunately, its current level of 21.86% indicates the ultimate unprofitability of the local accommodation facilities.

The intensity of functionality is an indicator that shows the intensity of tourist traffic, which is estimated by using the number of tourist arrivals. This indicator in the region is comparatively low and amounts to 42.7%, which means that the negative impact of tourists on the local culture and the local identity is low. Higher values of this indicator were recorded in Kladovo, Majdanpek (Djerdap), Sremski Karlovci and Belgrade.

Table 4

Indicators of tourism development in 2016

Municipality	Population (2011 census)	Tourists	Nights spent	Bed places	Length of stay (day)	Functionality index (%)	Accommodation occupancy (%)	Tourism intensity (%)
Belgrade	1,647,490	913,150	1,867,150	15,389	2.0	0.93	33.24	55.43
Apatin	29,500	7,007	52,035	610	7.4	2.06	23.37	23.75
Odzaci	30,202	58	319	56	18.5	0.18	1.56	0.19
Sombor	87,539	11,271	21,548	630	1.9	5.59	9.37	12.88
Bela Crkva	17,912	1,186	8,024	1,016	6.8	5.67	2.16	6.62
Kovin	34,990	2,520	8,915	130	3.5	0.37	18.79	7.20
Pancevo	123,021	1,190	2,310	78	1.9	0.06	8.11	0.97
Novi Sad	333,268	174,489	360,578	9,129	2.0	2.73	10.82	52.36
Bac	55,898	547	1,346	33	2.5	0.06	11.17	0.98
Backi Petrovac	14,415	2,708	5,386	197	2.0	1.37	7.49	18.79
Backa Palanka	13,418	3,310	6,804	228	2.0	1.70	8.18	24.67
Beocin	15,589	1,982	4,700	64	2.4	1.70	20.12	12.71
Sremski Karlovci	8,797	7,219	12,926	282	1.8	3.20	12.56	82.06
Titel	16,070	558	1,444	93	2.6	0.58	4.25	3.47
Zrenjanin	123,536	15,261	54,085	674	3.5	0.55	21.98	12.35
Indjija	47,818	2,503	4,762	210	1.9	0.44	6.21	5.23
Stara Pazova	70,333	12,053	32,986	394	2.7	0.56	22.94	17.13
Kladovo	21,142	25,651	50,187	1,173	2.0	5.55	11.72	121.32
Majdanpek	19,854	24,774	44,245	736	1.8	3.70	16.47	124.78
Negotin	38,030	4,971	14,043	530	2.8	1.39	7.26	13.07
Pozarevac	73,975	13,269	30,164	129	2.3	0.17	64.06	17.93
Veliko Gradiste	18,956	17,891	52,861	242	3.0	1.28	59.84	94.38
Golubac	8,654	3,186	4,540	835	1.4	9.65	1.49	36.81
Smederevo	107,170	3,554	5,989	318	1.7	0.30	5.16	3.31
<i>Total</i>	2,957,577	1,250,308	2,647,347	33,176	2.1	1.12	21.86	42.27

Source: Statistical Office of the Republic of Serbia.

Conclusion

The Serbian Danube Region is becoming an increasingly important tourist destination of Serbia, along with popular spa areas and mountain destinations. It is rich in natural and anthropogenic tourist attractions, which are underrated and deserve to be better presented in the tourist market. The region's natural highlights, which could successfully compete with their counterparts in other European countries, require additional investment into the development of their tourist infrastructure. Although the general attitude in the region is that each municipality should bear responsibility for the development of its own tourism industry, it would be more productive to foster stronger links between the municipalities. Then, more prosperous municipalities such as Belgrade and Novi Sad would also be able to boost the growth of tourism in other municipalities and thus make their eco-

nomic development more balanced. This way, underdeveloped areas would become more attractive to tourists while more advanced municipalities would be able to reduce the negative impact of tourism on their environment and the population's culture and way of life. Moreover, such strategy would allow the government to redistribute the pressure on the existing infrastructure, which is overloaded in the high peaks of the tourist season. In the future, measures should be taken to preserve the region's natural beauty, to develop sustainable tourism, and to invest in creating diverse and modern tourist accommodation, transport and service infrastructure. It is also recommended to develop such areas of tourism industry as sports tourism, health and recreation, sightseeing, religious tourism and congress tourism, which are less dependent on weather conditions and can ensure stable tourist traffic throughout the year.

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