

# Sustainable Nature Tourism Business Development in the MICE Industry Era: A Bibliometric Analysis

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## ABSTRACT

*This research aims to investigate the development of scientific research publications related to the development of sustainable natural tourism businesses in the industrial era of meetings, incentives, conferences, and exhibitions (MICE) for the period 2013-2023 on Google Scholar based on keywords and authors using the software Harzing Publish or Perish and VosViewer ver 1.6.20. The findings revealed that out of a total of 1000 searches for international publications with the keyword nature tourism business, only 989 publications were found with the highest total publications in 2013 of 177 publications and the lowest in 2023 of 6 publications. The journal with the highest publication rating is Tourism Management Perspectives with 129 publications. Elsevier Science Publishers is the publisher with the highest publication achievement, namely 307 documents. Cluster 1 in red is the one most associated with the natural tourism business from 2018 to 2023 consisting of 12 items including Airbnb, big data, business analytics, business intelligence, consumer, food, hospitality business, hotel, internet, product, technology, tourist experience, and value. It can be concluded that the development of natural tourism business publications has decreased over the last 10 years. Improvements can be made through research that focuses on MICE activities as shown in the findings regarding the presence of technology keywords. The expected implication is that the results of these findings can contribute to the development of nature tourism business research in the future, especially in looking for references and factors related to this theme.*

## 1. INTRODUCTION

Nature-based tourism is a promising business trend today. This is supported by the presence of business actors and the interest of domestic and foreign tourists in culture, history, local traditions and extraordinary natural panoramas that they have never visited before (Teles da Mota & Pickering, 2020; Winter et al., 2020; Xu et al., 2023). Bukti empiris menyebutkan bahwa permintaan kunjungan wisata alam meningkat bukan hanya karena alasan rekreasi melainkan juga terapi alam (Rogerson & Rogerson, 2021). On the other hand, the era of the meeting, incentive, convention and exhibition industry, known as the MICE industry, has made the development of natural tourism increasingly rapid. The development of this digital era offers convenience for tourists to discover more tourist attractions throughout the world (Soloveva & Valkonen, 2022). Initially, MICE activities targeted business companies and organizations in the tourism sector which were related to the availability of infrastructure for their implementation. The aim is to promote cultural heritage and support creative industries through various art exhibitions, traditional performances and local product performances in various parts of the world ( et al., 2022). MICE practice involves organizing business events, such as meetings, conferences, trade shows and incentive events. In recent years, MICE has become a new trend and is increasingly being applied to the natural tourism business. Because it is able to create a more interactive and interesting experience for tourists (Litvinova-Kulikova et al., 2023). Examples of technology applications in the tourism industry are virtual reality (VR) and augmented reality (AR). The use of these two technologies can enable tourists to experience a virtual experience that is similar to visiting natural tourist destinations directly (Altinay Ozdemir, 2021; Basrowi & Utami, 2020)y. For example,

tourists can use a VR headset to explore natural panoramas in Indonesia or dive in the beautiful open sea (Yu et al., 2023).

Literature studies reveal that the natural tourism business has given birth to many new business actors, including money exchange providers, car rentals, traditional handicraft centers and local cuisine. Qualitative study that investigates the factors that influence the development of sustainable tourism businesses. For example, the use of social media (Basrowi et al., 2020), software and AI (Ferrer-rosell, 2023; Purnomo, 2021) supply chain resilience (Tasnim et al., 2023) and culinary trends. Apart from that, tourists who care about the environment make natural tourism increasingly popular among the nature-loving community. Nature tourism is able to make a major contribution to ecosystem function, nature conservation and the community's economy (Baloch et al., 2023; Stanciu et al., 2022). There are quite a few quantitative studies on the influence of various variables on sustainable natural tourism businesses. Also about the vulnerability of natural tourism to extreme climate change (Barbhuiya & Chatterjee, 2020; Dube & Nhamo, 2020). However, not many researchers have been found to investigate the development of scientific publications in this field.

Research using bibliometric analysis methods is very important for the natural tourism business sector. This is related to predicting potential opportunities for natural tourism business development. Bibliometric analysis is useful for illustrating trends, providing evidence for research impact, discovering research areas, and identifying suitable sources for research publications on similar themes. Previous studies investigated tourism disparities based on 63,176 publications in Scopus journals. The findings reveal the weaknesses and strengths of tourism studies past, present and future. This research also describes various social networks of countries and authors on this theme (Correia & Kozak, 2022). Another study used the same analysis to investigate sustainability and tourism marketing using search data from 1997 to 2020. Based on 694 publications generating 2,193 citations per year identifying technology as the main keyword for sustainability and tourism marketing (Cavalcante et al., 2021). Likewise, other research conducted by Yoopetch (2019) from 1990 to 2018 regarding the knowledge base of sustainable tourism development (Yoopetch & Nimsai, 2019). This research shows its novelty by expanding the study of the natural tourism business over the last 10 years. The expected implication is that this research can provide new knowledge regarding the importance of nature-based tourism studies in the MICE era to support sustainable development goals (SDGs).

## 2. METHOD

This research uses international publication data in the field of natural tourism business sourced from the Google Scholar database (<https://scholar.google.com/>). Data were collected through searching publications in Scopus with the keywords instrumentation, instruments, measurements, medical instrumentation, virtual instrumentation, and instrumentation system with the categories article title, abstract, keywords in the period 2013–2023. Data in the form of the number of publications per year, journals containing articles in the field of instrumentation, authors, author origins, and subjects were analyzed using Microsoft Excel 2010. Meanwhile, trends in the development of international publications in the field of instrumentation were analyzed using VosViewer software ver 1.6.20.

## 3. RESULT AND DISCUSSION

### Development of Natural Tourism Business Publications

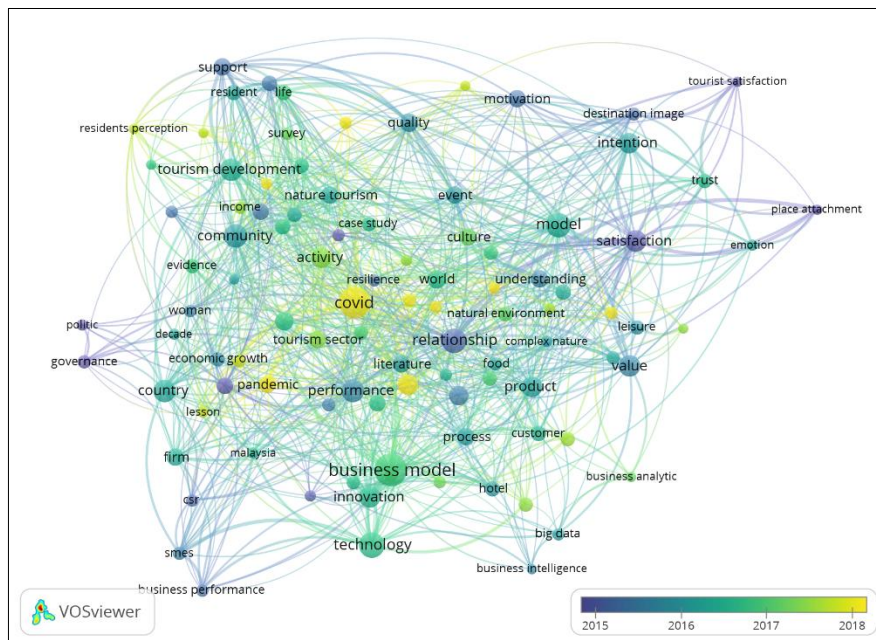
The development of publications in the field of business science that focuses on natural tourism in 2013-2023 has experienced a significant increase. A total of 100 keyword searches found around 989 papers published in journals throughout the world that investigated various factors related to the nature tourism business. Some of them are published in internationally reputable journals such as Scopus and WOS. The highest increase occurred in 2013, reaching 177 publications (17.9%). Can be seen in table 1.

**Table 1.** Development of Natural Tourism Business Publications Period 2013-2023

Year of Publication	Number of Publications	Percentage (%)
2023	6	0,6
2022	15	1,5
2021	51	5,2
2020	97	9,8
2019	69	6,9
2018	79	7,9
2017	120	12,2
2016	120	12,2
2015	137	13,9
2014	118	11,9
2013	177	17,9
<b>Total</b>	<b>989</b>	<b>100</b>

Source: Data Processed from PoP, 2023

The development of publications in the field of natural tourism business based on table 1 illustrates that in 2013-2023 there was an increase and the highest growth occurred in 2013, namely 177 publications (17.9%). This was followed by 2015 with 137 publications (13.9%), and there was the same number of publications in 2016 and 2017 which were in third position with 120 publications (12.2%). It is surprising that the development of natural tourism which continues to increase every year is not accompanied by an increase in the number of research published in international journals. It is understood that there is a wide gap for future research to investigate related to the development of the halal tourism business. Because of the extraordinary natural potential of various developing countries such as Indonesia. Research on natural tourism business development is of course very much needed by stakeholders in developing tourism development policies and management. The increase can be seen in Figure 1.



**Fig. 1.** Publications in The Field of Natural Tourism Business on Google Scholar Period 2013-2023  
 Source: Data processed from PoP, 2023

### Core Business Journal

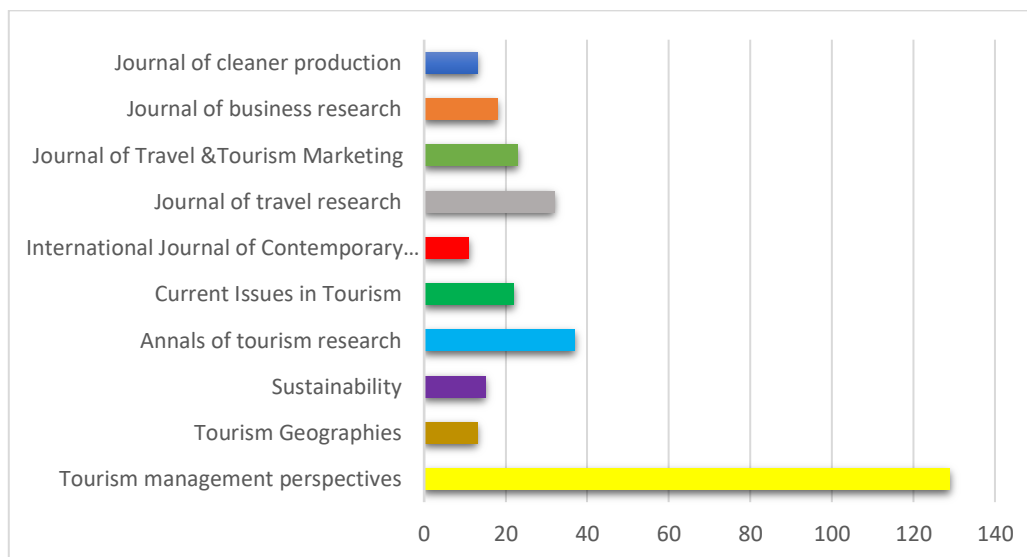
Based on search results using the keyword natural tourism business on Google Schoolar, 989 publications were obtained. Available data shows that most international publications in the field of natural tourism business are published in the core journal Tourism Management Perspectives (129 publications). Table 2 shows the top ten core journals published in the field of natural tourism business.

**Table 2.** Core Journal of the Nature Tourism Business Sector on Google Shoolar

Core Journal	Total
Tourism management perspectives	129
Annals of tourism research	37
Journal of travel research	32
Journal of Travel & Tourism Marketing	23
Current Issues in Tourism	22
Journal of business research	18
Sustainability	15
Tourism Geographies	13
Journal of cleaner production	13
International Journal of Contemporary Hospitality Management	11

Source: Data Processed from PoP, 2023

Based on the data in Table 2, it illustrates the highest publication development over the last ten years for keyword searches in the natural tourism business sector. The highest publication is shown in yellow in the journal Tourism management perspectives (129 publications), the second ranked Annals of tourism research (37 publications) is shown in blue, and the third ranked Journal of travel research (32 publications) is shown in grey. The next order is Journal of Travel and Tourism Marketing (23 publications), Current Issues in Tourism (22 publications), Journal of business research (18 publications), Sustainability (15 publications), Tourism Geographies and Journal of cleaner production (13 publications), and International Journal of Contemporary Hospitality Management (11 publications).



**Fig 2.** Development of the core journal in the Natural Tourism Business Sector

Source: Data processed from PoP, 2023

### Publishing Publications in the Nature Tourism Business Sector

Based on bibliometric data analysis, it shows that Elsevier Science Publishers is the institution that publishes the most research in the field of natural tourism business. In second place is SAGE Publications Inc with 191 publications, and in third place is Emerald Publishing with 70 publications. Table 3 shows the top ten institutions that publish in the natural tourism business sector.

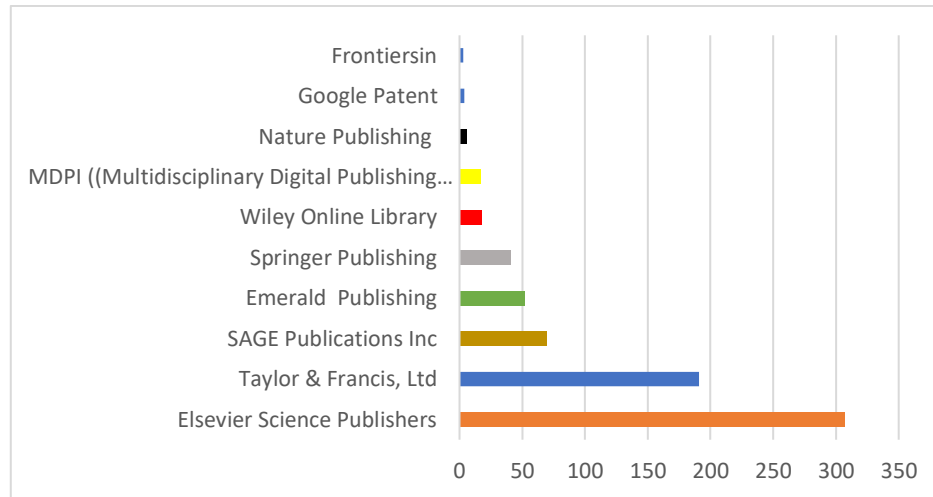
**Table 3.** Core Journal of the Nature Tourism Business Sector on Google Shoolar

Publisher	Total
	307
Taylor & Francis, Ltd	191
SAGE Publications Inc	70
Emerald Publishing	52
Springer Publishing	41

Wiley Online Library	18
MDPI ((Multidisciplinary Digital Publishing Institute)	17
Nature Publishing	6
Google Patent	4
Frontiersin	3

Source: Data Processed from PoP, 2023

Table 3 and Figure 3 show that Elsevier Science Publishers is the institution with the highest number of publications from the results of research in the field of natural tourism business, which is 307 publications.



**Fig. 3.** Publisher Data in the Nature Tourism Business sector  
Source: Data processed from PoP, 2023

### Productivity of Researchers in the Nature Tourism Business Sector

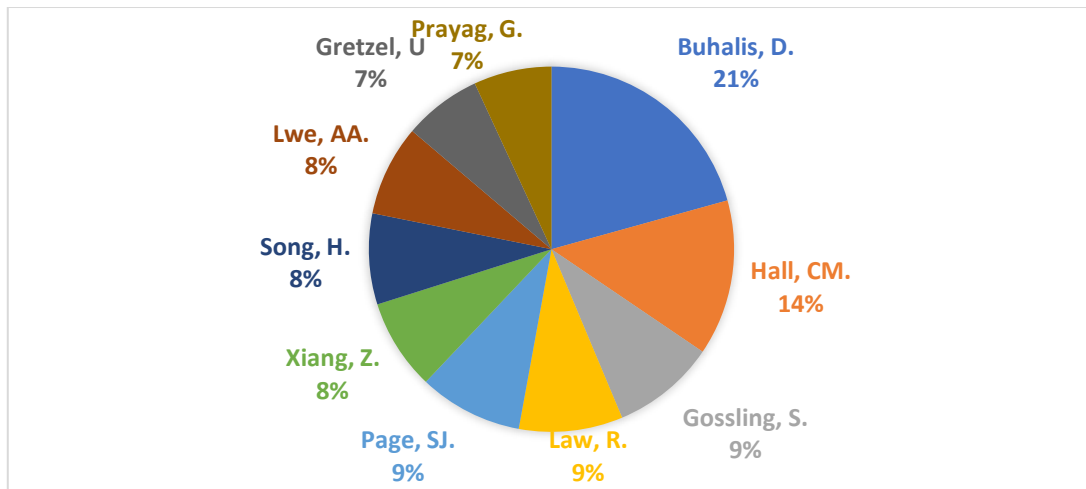
The productivity of the top ten researchers in the natural tourism business in 2013-2023 on Google Shoolar is quite high. On average there have been 6-8 publications over the last 10 years. The researcher with the highest level of research productivity and number of documents is Buhalis, D. That is 18 documents, second place is Hall, CM. with a total of 12 documents. (See table 4).

**Table 4.** Verification of Researcher Productivity in the Nature Tourism Business Sector

	Document
Buhalis, D.	18
Hall, CM.	12
Gossling, S.	8
Law, R.	8
Page, SJ.	8
Xiang, Z.	7
Song, H.	7
Lwe, AA.	7
Gretzel, U.	6
Prayag, G.	6

Source: Data processed from PoP, 2023

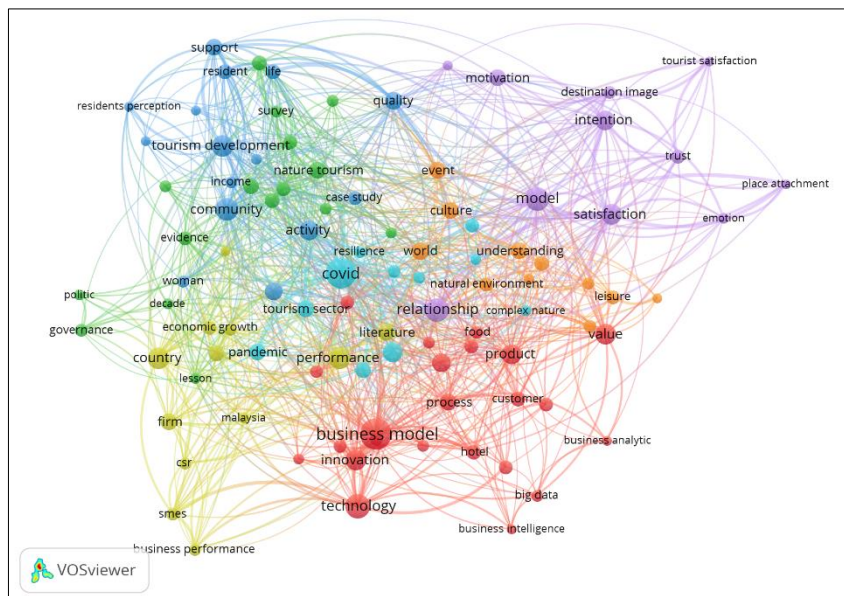
Based on Table 4 and Figure 4, it shows that several writers have the same productivity. Only the two highest are shown in red with the author names Buhalis, D and Hall, CM. which is at the top of the data verification results. Gossling, S., Law, R., and Page, S.J. each has publications of 8 documents. Xiang, Z., Song, H., and Lwe, AA. each has publications of 7 documents. Gretzel, U. and Prayag with publications of 6 documents.



**Fig. 4.** Productivity of Researchers in the Nature Tourism Business  
Source: Data processed from PoP, 2023

### Publication Development Map Based on Keywords

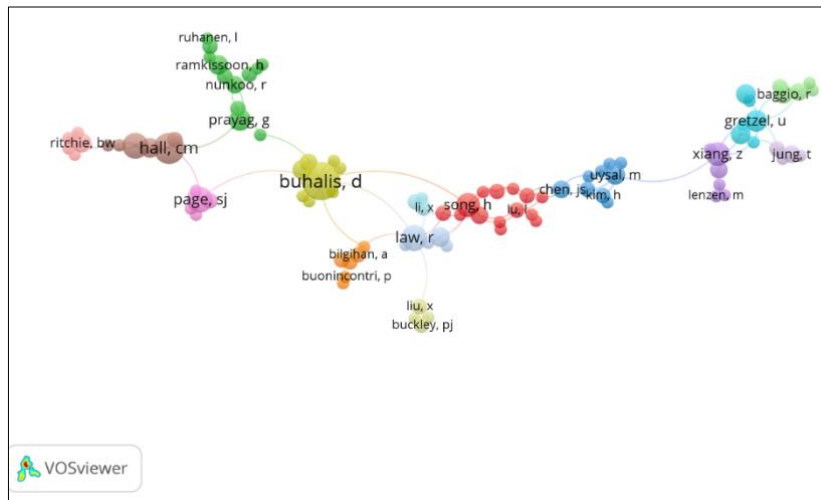
The development of publications based on natural tourism business keywords is illustrated in Figure 5. From the data analysis carried out, it is known that there are 7 keyword clusters. Cluster 1 in red consists of 12 items including airbnb, big data, business analytics, business intelligence, consumer, food, hospitality business, hotel, internet, product, technology, tourist experience, value. Cluster 2 in lime green consists of 12 items including attitude, China, ecotourism, governance, environment, nature tourism, politics, rural tourism, small business, sustainable development, tourism activity, tourist attraction. Cluster 3 in powder blue consists of 12 items including activity, case study, community, entrepreneurship, income, overtourism, quality, resident, support, tourism development, tourism impact, woman. Cluster 4 in yellow consists of 10 items including business performance, company, country, CSR, economic growth, firm, Malaysia, performance, SMEs, society. Cluster 5 in purple consists of 7 items including destination image, emotion, Indonesia, motivation, place attachment, tourist satisfaction, trust. Turquoise cluster 6 consists of 8 items including complex nature, Covid, crisis, individual, loss, natural disaster, resilience, risk. Cluster 7 in orange consists of 7 items including business travel, culture, events, leisure, natural environment, place, recreation.



**Fig.5** Co-Word Map of Publications in the Nature Tourism Business sector  
Source: Data processed by VosViewer, 2023

### Map of Publication Development by Author

Figure 6 shows a visualization of the co-author network, research in the field of natural tourism business is divided into 9 clusters. Cluster 1 in red consists of 9 items including chen, js., chi eg., kim h., lu l., park j., prebensen nk., song h., uysal m., zhang h. Cluster 2 in green consists of 7 items including hosany s., nunkoo, r., prayag g., ramkissoon h., smith slj., so kkf., weilier b. Cluster 3 in powder blue consists of 7 items including baggio r., cooper c., fuchs m., gretzel u., sigala m., wang d., xiang z. Cluster 4 in yellow consists of 5 items including law r., li g., li x., pan b. Cluster 5 in purple consists of 4 items including Gossling S., Hall CM., Scott D., Williams SM. Cluster 6 is turquoise colored consisting of 3 items including buhalis d., weber j., xu f. Cluster 7 in orange consists of 2 items including getz d., page sj. Cluster 8 is brown. Cluster 9 in pink consists of 2 items including buckley pj., liu x.



**Fig. 6.** Co-Author Visualization of Publications in the Nature Tourism Business Sector  
Source: Data processed by VosViewer, 2023

Based on the findings presented, this research helps to understand research trends over a 10 year period in the field of natural tourism business. The hope is that it can support the progress of the natural tourism business amidst the development of the MICE industry. Technological sophistication to encourage sustainability in the tourism industry is very promising. Several previous studies have supported evidence of the positive influence of the application of technology on tourism activities, especially in terms of services and promotions. Therefore, studies on the natural tourism business need to innovate with existing technology through various collaborations with the government, private sector and the international arena.

Studies have provided evidence of a significant decline in research related to the nature tourism business. Of course, this is in reverse comparison with current tourism trends which are increasingly popular and much sought after by foreign tourists. The research results also reveal that current publications are increasingly focused on technology and sustainability. The importance of developing sustainable natural tourism is related to the impact of tourism on local communities, resources and the environment. The hope is that through this literature review it will contribute to becoming a reference for future studies on natural tourism through MICE activities. In this way, the natural tourism business can ensure environmental balance, cultural preservation and increase people's love and concern for the natural surroundings. Likewise with efforts to create new jobs and increase the country's foreign exchange through foreign tourist visits.

### 4. CONCLUSION

Based on the findings that have described research developments related to the development of natural tourism businesses in the MICE industry for the publication period from 2013 to 2023 which are indexed by Google Scholar. Of a total of 1000 searches for scientific publications throughout the world, only 989 publications were found. Therefore, it can be concluded that the field of knowledge with this theme is still low. So there is an opening for future studies to investigate the nature tourism

business. This is shown by publications which continue to decline from year to year until in 2023 there are only 6 international publications. Future studies need to investigate the factors that cause a decline in research interest in sustainable nature tourism businesses considering that the extraordinary potential of nature is able to make this business able to support the country's economy.

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