

TRENDS AND INTERCONNECTIONS BETWEEN DIGITAL NOMADS AND TOURISM: A BIBLIOMETRIC ANALYSIS

Tendências e Interligações entre Nômadas Digitais e Turismo: Uma Análise Bibliométrica

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ABSTRACT

The relationship between digital nomads and tourism is a little addressed topic in the scientific literature. Understanding the needs, expectations and attributes of this audience may open new opportunities for tourism, what justifies the relevance of this research. A bibliometric analysis was carried out, indicating an evolution in the concept of digital nomads and its interconnections to tourism, especially highlighting psychological and sociological perspectives, in addition to the technological one which predominated in the initial studies. Results point to four dimensions that explain the relationship between digital nomads and tourism variables, namely: 'Supply attributes', 'Trends', 'Lifestyle' and 'Social engagement'. Each of these dimensions consists of a set of mediating variables, suggesting interesting supply guidelines on how to welcome these new audiences. Furthermore, the discussion suggests some challenges and opportunities for the tourism industry, and conclusion debates theoretical and practical implications.

KEYWORDS

Tourism; Tourism Trends; Lifestyle; Digital Nomads; Social Engagement.

RESUMO

A relação entre nômadas digitais e turismo é um tema pouco abordado na literatura científica. A compreensão das necessidades, expectativas e atributos deste público pode abrir novas oportunidades para o turismo, o que justifica a relevância desta investigação. Foi realizada uma análise bibliométrica, indicando uma evolução no conceito de nômadas digitais e as suas interligações com o turismo, destacando especialmente as perspectivas psicológicas e sociológicas, para além da tecnológica que predominou nos estudos iniciais. Os resultados apontam para quatro dimensões que explicam a relação entre os nômadas digitais e as variáveis

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do turismo, nomeadamente: 'Atributos da oferta', 'Tendências', 'Estilo de vida' e 'Compromisso social'. Cada uma destas dimensões consiste num conjunto de variáveis mediadoras, sugerindo interessantes orientações de oferta sobre como acolher estes novos públicos. Além disso, a discussão sugere alguns desafios e oportunidades para a indústria do turismo, e debates de conclusão com implicações teóricas e práticas.

PALAVRAS-CHAVE

Turismo; Tendências do Turismo; Estilo de Vida; Nómadas Digitais; Envolvimento Social.

INTRODUCTION

The pandemic crisis, whose effects we are still feeling, caused changes in lifestyles, resulting in new behaviours towards work and leisure, which create opportunities and challenges to tourism. However, the concept of digital nomads and their relationship with tourism is recent and still little studied in the literature (Hannonen, 2020; Williamson, Hassanli & Grabowski, 2022). This was the reason that motivated conducting a bibliometric analysis on this topic (Aria & Cuccurullo, 2017; Zupic & Cater, 2015). It was felt that it was necessary to have a comprehensive and multidisciplinary view, which would enable a mapping of the scientific production that would identify the challenges associated with these new audiences, as well as the effect of their needs on the evolution of destination marketing and management trends.

A search was conducted in the Scopus database during the month of March 2022, having used the descriptors 'digital nomads' and 'tourism'. Fifty-one publications were identified, whose content was analysed in the VOSviewer software. The results indicate that there are two major groups of digital nomads: (i) those who adopt this type of life for the mobility / schedule advantages that come with remote work; (ii) others for whom combining leisure with work is a life choice (Chevtaeva & Denizci-Guillet, 2021; Green, P. (2020; Hermann & Paris, 2020; Hong, 2021; Jung & Buhr, 2022; Périssé, Vonthron & Vayre, 2021; Shawkat, Rozan, Salim & Shehzad, 2021; Tyutyuryukov & Guseva, 2021; Wang et al, 2020). Knowing the motivations of these audiences and their needs concerning tourism demand is the challenge to which the present research seeks to respond.

The different sections of this article will clarify this question: (2) the literature review evidences the evolution of scientific thought, reflecting a multidisciplinary approach on these concepts; (3) the method includes the treatment of a set of bibliometric indicators, which give us an overview of the research carried out; (4) the findings highlight the mediating variables that help to understand the relationship between digital nomads and tourism, highlighting, 'Technological

infrastructures', 'Organizational strategy', 'Destination characteristics', 'Communication', 'Economy', 'Community' and 'Research'; (5) the discussion refers to the theoretical and practical contributions to destination marketing and management arising from the results of this study, and identifies the attributes of this public and their requirements in the reconciliation of leisure and work, a condition inherent to their motivation to travel; and (6) the conclusion presents the main issues addressed and the theoretical and practical implications of the research undertaken.

BACKGROUND

The Internet brought changes, not only in the way we communicate, but also in the possibility of transforming this interaction through new ways of using technology in everyday life, creating a sociotechnical pattern of connection (Lemos, 2002). This new paradigm has had the effect, in recent years, of significant changes in society that have implied new formats of consumption, observed in the way we relate to work and social life in general. We are witnessing the emergence of a new social group, which seeks a lifestyle marked by the freedom to travel while working, supported by professions of the digital world (Cook, 2020). This is how digital nomadism is born (Prester, Cecez-Kecmanovic & Schlagwein, 2019).

The term digital nomad emerged in 1997, with the book *Digital Nomad* (Manners & Makimoto, 1997), which referred to the return to nomadic origins provided by the advancement of technology and information systems. This was possible with the appearance of mobile and personal devices such as: mobile phones, notebooks and tablets, high-speed communication networks and cloud computing (Von Zumbusch & Lalicic, 2020). A new category of workers has thus emerged with high mobility and schedule flexibility, supported by the use of digital technologies to carry out their work anywhere in the world (Makimoto, 2013; Hannonen, 2020; Jarrahi, Philips, Sutherland, Sawyer & Erickson, 2019; Schlagwein, 2018). According to Hannonen (2020), the relationship between increased international mobility and the personal search for more freedom and personal satisfaction has become a trend since the 1980s, giving rise to a diversity of constructs, such as: (i) residential or second-home tourism; (ii) seasonal migration; (iii) global nomadism or neonomadism; (iv) flashpacking and digital nomadism, among others.

The historical origin of digital nomadism is essentially centred on the development of 3 strands of society: (i) technological; (ii) business; and (iii) tourism (Aroles, Granter & De Vaujany, 2020; Schlagwein, 2018).

Table 1. Historical Evolution of the Digital Nomad

APPROACHES	HISTORICAL EVOLUTION
Technological	After 1970, with the pre-Internet development, the first studies of flexible working based on information technology and work-life balance emerge, of which the hippy trips in mini-vans or the appetite for Asian destinations inspired by the Beatles are a prime example.
Business	Between 1980 and 1990 we have the advance and consolidation of Internet technologies (vg. TCP/IP and WWW), increased flexibility of schedules and work place (home-based) and new business models using online transactions (Amazon, eBay, Paypal).
Touristic (beginning)	In the 90s, new destinations appeared, such as Thailand, associated to the backpacking phenomenon, which is characterised by long distance trips, more accessible economically. At the same time, the concept of low-cost airlines develops in Europe, which enables the emergence of a new segment of long-term travel supported by technology, establishing the beginning of the link between the phenomenon of digital nomadism and tourism.
Touristic	From the 2000s, digital nomadism becomes more popular, evolving from an individualistic practice to the notion of community, as follows: (a) starts in the individual needs of companies or information technology (IT) workers, where companies and IT workers started to adopt remote working; b) followed by the emergence of freelancers' platforms, and later evolve into the first coworking spaces and internet-café, c) content portals, geared towards digital nomadism and new platforms such as Couchsurfing, TripAdvisor, Airbnb, and the emergence of nomadic communities such as Nomadlist and nomadic destinations like Ubud, Bali and Bangkok; in Thailand, new travel styles such as flashpacking and new accommodation formats such as co-living spaces are reinforced.

Source: Own elaboration, based on Schlagwein, 2018

The most recent studies of digital nomadism focus on very diverse approaches, namely: cultural phenomenon, creative tourism, work-leisure relationship, type of workforce, new economy and business. They are also focused on describing nomadism as a lifestyle. In 2020, this theme gains a new perspective due to the effects of the COVID-19 pandemic, which forced the widespread adoption of telework worldwide. The pandemic also brought implications for the lifestyle of digital nomads, with the closing of borders, restrictions on mobility and the mandatory home office (De Almeida, Correia, Schneider, & De Souza, 2021; Williamson, Hassanli, & Grabowski, 2022). Thus, new ways of travelling are resumed, witnessing an exponential growth of the #Vanlife movement (Gretzel & Hardy, 2019).

These implications of the pandemic on work reinforce the psychological and sociological perspectives of this phenomenon, leveraged in new realities of home office and remote work, and in the consequences of work-life balance. The psychological component is perceived in the

search for a holistic lifestyle, where work and leisure boundaries blur. Other aspects mentioned are: (i) spatial disconnection from the notion of home due to spatial and professional freedom; (ii) relationship with other digital nomads in each destination, creating affective bonds by proximity of interests (Reichenberger, 2018; Loryn, 2022). This last aspect triggers the willingness to share with others, facilitating the formation of communities in each destination, around common values. This gradual interaction gradually gains space and reinforces group connections, leading to an evolution in the way of living of digital nomads.

The individualism of the home office, forced during the pandemic, reinforced the advantages of having a functional workspace and the need for integration and networking among other members of the nomadic community (Bozzi, 2020). Orel (2019, 2021) points to the flexibility of the labour market and fluidity of digital work as a driving factor for the growth of shared workspaces (coworkings) used by most digital nomads. Thus, the concept of coworking gains relevance by offering a collaborative space, available in different destinations, favouring affordable and sustainable mobility (Gomes, 2019; Mancinelli, 2018, 2020). They also become productivity and meeting spaces for social and leisure activities (Sutherland & Jarrahi, 2017; Nash, Jarrahi & Sutherland 2021). It is the sociological perspective that stands out here.

Finally, Hannonen (2020) considers that, currently, this issue falls into two types of approaches: (a) one focused on work, which considers the digital nomad to be remote workers who use technology to be mobile, with lifestyle characteristics being a secondary aspect; (b) another emphasises the lifestyle itself, in which the focus is mainly on the strong desire to travel constantly, reconciling this way of living with work. It is this second perspective that frames the relationship between digital nomadism and tourism and has led countries to look at digital nomads and seek to create destinations adapted and attractive to this audience (Chevtaeva & Denizci-Guillet, 2021; Frick & Marx, 2021; Shawkat, Rozan, Salim & Shehzad, 2021; Tyutyuryukov & Guseva, 2021; Wang et al., 2020).

METHOD

Data gathering procedures - Data were collected in the first week of March 2022, in the SCOPUS database, according to the following criteria: [1] identify scientific articles with previously defined descriptors in the title, abstract or keywords, namely: digital nomads and tourism, digital nomad tourists, digital nomad's lifestyle and infrastructure for digital nomads; [2] select documents within the following scientific areas: Business, Management and Accounting, Social

Sciences, Psychology, Environmental Science, Computer Science, Engineering; [3] select publications written in English. No temporal limitation was performed, in order to obtain a historical framework of the bibliometric studies on the subject under study.

Data analysis techniques - A bibliometric analysis was performed, since "Bibliometrics is a technique of bibliographic data analysis that uses quantitative tools to assess the performance of research in certain scientific fields, mapping the scientific production on certain topics" (Sigala, Kumar, Donthu, Sureka& Joshi, 2021, p.274). The use of this technique, which is quite effective in explaining concepts that have not yet been studied, can be complemented with qualitative analyses that help organising the scientific production and highlighting the various perspectives that frame it, as well as facilitating a deeper understanding of the themes.

It is from this reflection and interconnection of concepts that new constructs often emerge, enabling knowledge to be advanced. There are several advantages to its use, of which we highlight: (a) capture the development of a scientific field through a temporal framework, being carried out at a specific moment in time to represent a static image of a certain topic (Aria & Cuccurullo, 2017); (b) identify the research questions, select the most relevant bibliometric bases for the topic under study and point out which techniques are most appropriate for data collection and analysis, providing guidance for the construction of research plans (Zupic & Cater, 2015); (c) "identify the area of knowledge of a topic or field of research and its intellectual structure, examine the scientific frontline or conceptual structure of a topic, or research area, and produce a structured social network of a particular scientific community" (Aria &Cuccurullo, 2017, p. 960).

Data analysis was supported on SCOPUS metrics and VOSviewer software. VOSviewer is a tool for building and visualizing bibliometric networks built based on citations, co-citations or co-authorship relationships, extracted from a database of scientific publications on a given topic (Rafael, & Pires, 2021). This software was used for concept mapping, with the purpose of presenting the occurrences of keywords and most referenced publications. The analysis of the research produced included the treatment of bibliometric indicators, namely: year of publication, number and type of documents published, scientific perspective, contributions by countries and performance of scientific journals.

Documentary sample - The research followed the assumptions of the non-probabilistic "snowball" sampling technique (Vinuto, 2014). The documentary sample consists of 51 documents, which were subjected to a pre-analysis based on the following criteria: [1]

documents available in Portable Document Format (PDF) in text format were retained; [2] publications that were not available in full text were excluded; [3] documents whose content was directly related to the topic under study, i.e. which addressed the issue of digital nomads from the perspective of tourism, were retained. After the application of these criteria, 7 documents were excluded, and the documentary sample consisted of 44 valid publications (Table 2).

Table 2. Documentary sample

DATA BASE	RESULTS	EXCLUDED	TOTAL
Scopus	51	7	44

Source: Own elaboration, based on SCOPUS results

FINDINGS

Table 3 shows the distribution of publications by scientific field, highlighting the diversity of approaches present in the research. The areas of Social Sciences (29.1%), Computer Sciences (26.6%) and Business, Management and Accounting (20.3%) predominate, and it is in these fields that most research is published (76%).

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Table 3. Distribution of publications by scientific domain

SCIENTIFIC DOMAIN	N	%
Social Sciences	23	29.1
Computer science	21	26.6
Business, Management and Accounting	16	20.3
Engineering	6	7.60
Psychology	3	3.80
Science and Environment	4	5.10

Source: Own elaboration, based on Scopus results. **Note:** Some papers are indexed in more than one scientific domain

Although some publications are from scientific domains of the exact sciences field, 70% of the articles adopt a qualitative methodological approach and 18% a mixed one, which reinforces what had been previously stated, about being a subject still little studied (Table 4).

Table 4. Methodological Approach

METHODOLOGICAL APPROACH	N	%
Qualitative	31	70
Multimethod	8	18
Quantitative	1	03
n/a	2	

Source: Own elaboration, based on Scopus results

Empirical studies are mainly of a qualitative nature, as already mentioned, with several investigations of a more conceptual nature (theoretical reflections or systematic literature reviews), which indicates the need to understand these concepts and their interconnections in a deeper way (Table 5).

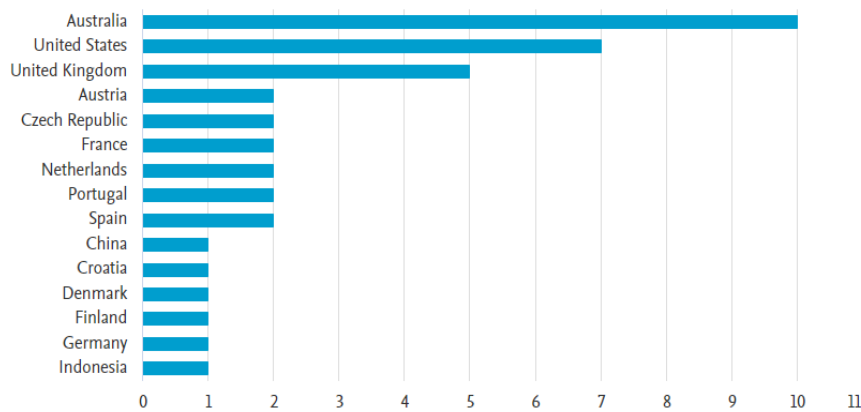
Table 5. Study type

STUDY TYPE	N	%
Empirical	9	22.5
Theoretical reflection	8	20.0
Ethnographic	7	17.5
Literature review / Critical review	6	15.0
Descriptive /Case study	5	12.5
Inductive method	2	5.00
Comparative analysis	1	2.50
Exploratory	1	2.50
Experimental	1	2.50

Source: Own elaboration, based on SCOPUS results

Figure 1 shows the geographical distribution of publications by country of origin of the first author, highlighting the continents with two or more publications, namely: Europe (n=17, 38%), Oceania (n=10, 22.4%) and North America, represented by the United States, (n=7, 15%).

Figure 1. Geographic distribution of publications by the country of origin of the first author



Source: Own elaboration, based on Scopus results

Table 6 systematises the scientific journals based on the number of publications, ordered by their impact factor. The journals *Information Technology and Tourism* and *Proceedings of the ACM on Human-Computer Interaction* stand out, with more than 2 published articles, both being of North American origin.

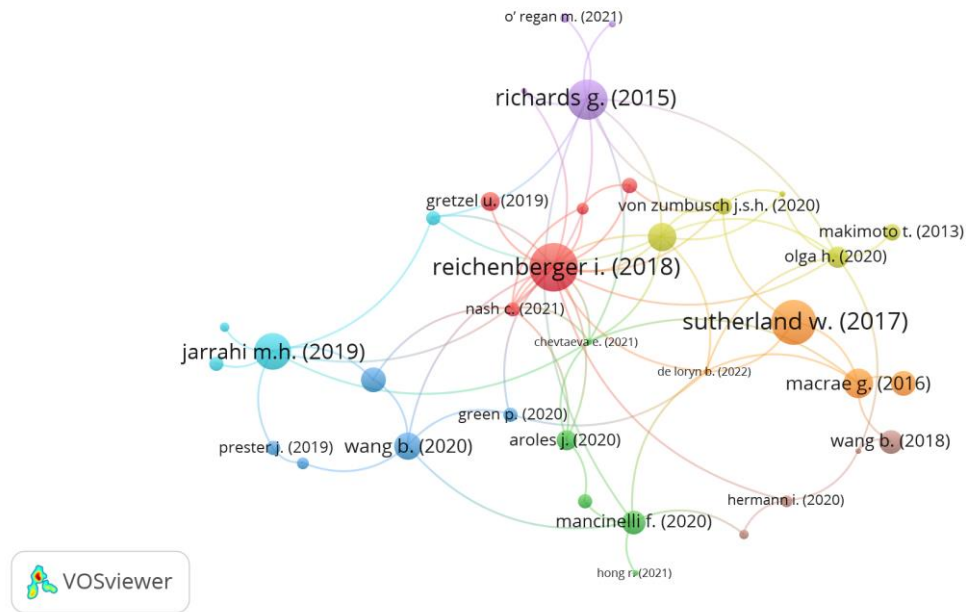
Table 6. Number of publications per scientific journal and their Impact Factor

Scientific Journal	N	Impact Factor
<i>Journal of Destination Marketing and Management</i>	1	6.952
<i>Current Issues in Tourism</i>	1	6.890
<i>Journal of the Association for Information Systems</i>	1	5.470
<i>IEEE Solid-State Circuits Magazine</i>	1	4.929
<i>Human Behavior and Emerging Technologies</i>	1	4.500
<i>Proceedings of the ACM on Human-Computer Interaction</i>	3	4.420
<i>Conference on Human Factors in Computing Systems - Proceedings</i>	1	4.400
<i>Social Media and Society</i>	1	4.249
<i>New Technology</i>	1	4.231
<i>Sustainability (Switzerland)</i>	1	3.480
<i>Marketing Theory</i>	1	3.150
<i>Tourism Recreation Research</i>	1	3.030
<i>Global Networks / Journal / Sub area • Social Sciences:</i>	1	2.927
<i>Information Technology and Tourism</i>	5	2.449
<i>Mobilities</i>	2	2.336
<i>International Journal of Culture</i>	1	2.257
<i>Journal of the association for information science and technology</i>	1	2,687
<i>Annals of Leisure Research</i>	2	1.830
<i>Cultural Studies</i>	1	1.370
<i>Journal of Environmental Management and Tourism</i>	2	1.357
<i>IFAC-PapersOnLine</i>	1	1.132
<i>Identity Emergence in the Flow of Practice</i>	1	1.130
<i>World Leisure Journal</i>	1	1.037
<i>26th European Conference on Information Systems: Beyond Digitization - Facets of Socio-Technical Change</i>	1	1,180
<i>International Journal of Tourism Anthropology</i>	1	0.740
<i>Proceedings of the International Conference on Information Technology Interfaces</i>	1	0.710
<i>ACIS 2018 - 29th Australasian Conference on Information Systems</i>	1	0.590
<i>e-Review of Tourism Research</i>	1	0,480
<i>Journal of Advanced Research in Dynamical and Control Systems</i>	1	0,310
<i>International Conference on Research and Innovation in Information Systems</i>	1	0,200
<i>Journal of Tourism Futures</i>	1	2,030
<i>24th International Conference on Computer Supported Cooperative Work in Design</i>	1	0,640
<i>Fortieth International Conference on Information Systems</i>	1	-
<i>Proceedings of the ACM on Human-Computer Interaction</i>	1	-----
<i>International Conference on Information Systems</i>	1	-----
Total	44	

Source: Own elaboration, based on Scopus results

Figure 2 illustrates the citation relationship between authors, highlighting those who are most cited, namely: Reichenberger (2018) with 47 citations, Sutherland and Jarrahi (2017) with 41 and Richards (2015) with 33.

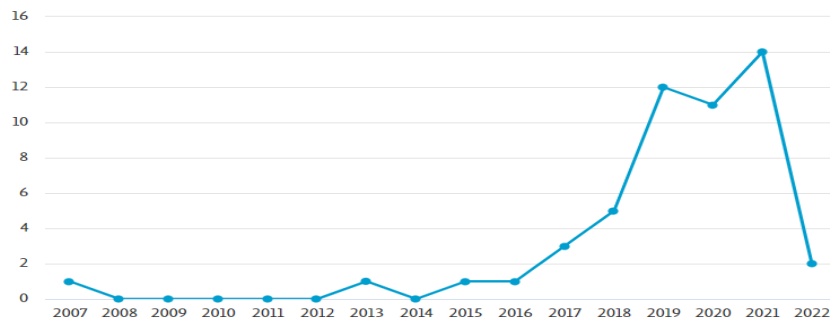
Figure 2. Relationship between the most cited authors



Source: Own elaboration, based on VosViewer results

Finally, it was verified when this topic began to interest the scientific community. Digital nomadism has become relevant as an object of study in the most recent years, especially since 2015. The first investigations appear in 2007, but it is a decade later (2017) that we start to find more scientific articles in which the relationship between digital nomads and tourism is addressed (Figure 3).

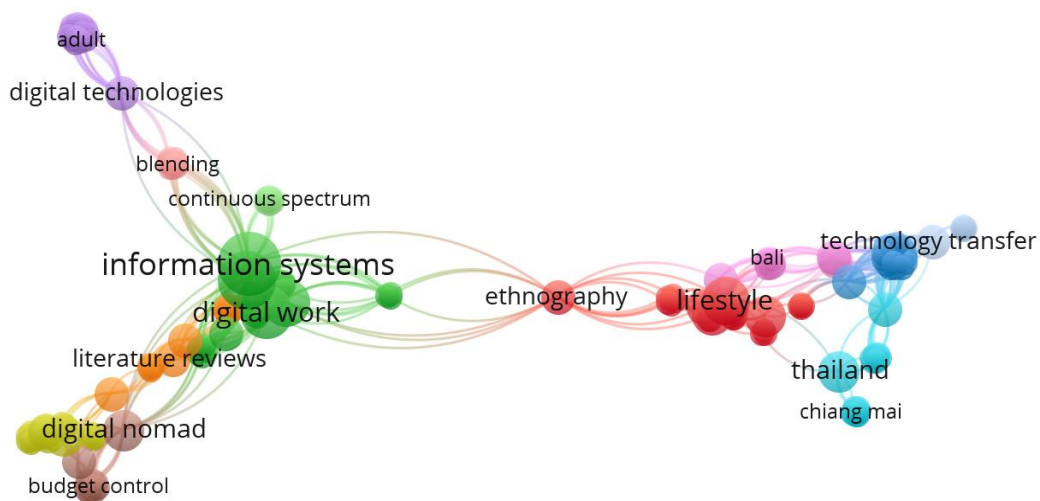
Figure 3. Number of publications by year



Source: Own elaboration, based on Scopus results

The data processing in the Vosviewer software focused, in this phase, on the analysis of the indexed keywords and keywords in general. Figure 4 illustrates the most relevant co-occurrences, as well as the way they are grouped, present in the indexed keywords of the 44 documents that constitute the documental sample. Two perspectives clearly stand out: a) on the left side of the figure there are contents close to the technological dimension of digital nomadism; b) the right side of the image reveals a dimension associated with lifestyle, whose interaction with tourism is done through the connection with tourist destinations, which already have a specialized tourist supply for these publics.

Figure 4. Indexed keyword co-occurrences



Source: Own elaboration, based on VosViewer results

This result clarifies the approach on the lifestyle of digital nomads and their social interaction with tourism. This public feels a great appetite for travelling and needs to reconcile leisure with work, personal life with professional life. They may therefore constitute new niche markets for tourism (Hannonen, 2020; Wang, Schlagwein, Cecez-Kecmanovic, & Cahalane, 2018, 2019; Schlagwein, 2018).

Trying to explain which mediating variables help explain the relationship between digital nomads and tourism, a concept map was built in Vosviewer from the analysis of the co-occurrences of the keywords of the 44 articles. The great polarity in the discussions about digital nomadism generates a poorly discriminative figure regarding the results, making it difficult to interpret them. For this reason, it was decided to present the results organized in Clusters, which make more evident both the dimensions that mediate the relationship established between the

variables defined, as well as indicate more clearly the different constructs that allow to explain it. The results establish four Clusters that highlight the technological, touristic, psychological and sociological approaches that are observed in the relationship between digital nomads and tourism, a connection that had already been established at the theoretical level, but which is clarified here (Wang, Schlagwein, Cecez-Kecmanovic, & Cahalane, 2018; Schlagwein, 2018).

DISCUSSION

The results obtained above enrich the discussion and clarify what is at stake in each of the dimensions, i.e., what this public expects from the tourism supply and how they anticipate the organisation of the services. These expectations are directly related to the evaluation of the quality of services and the satisfaction rates of this type of customer.

The technological dimension brings out clues about the needs of this public to reconcile profession and leisure, and it is clear that organisational processes and human resources have to adapt to their computer and online communication needs. For this reason, this dimension was designated 'Supply attributes. Increasing research and producing knowledge, mainly on work management in this domain, are fundamental to help structuring the tourism supply for these new publics. In this dimension, the technological perspective associated to organisational models and business management stands out (Table 7).

Table 7. Mediating variables and their relevance of the 'Supply attributes' dimension, from a technological perspective

Mediating variables	Items	Occurrence	Relevance
Network information	<i>Information science</i>	1	17
	<i>Information systems</i>	7	62
	<i>Information system disciplines</i>	1	11
	<i>Information use</i>	6	55
	<i>Social informatics</i>	1	17
	<i>Sociotechnical</i>	1	17
	<i>Telecommuting</i>	1	9
	<i>Telework</i>	1	9
TOTAL		19	197
Organizational strategy	<i>Digital work</i>	5	45
	<i>Factors of production</i>	1	19
	<i>Economic aspects</i>	1	18
	<i>Human resource management</i>	1	17
	<i>Organizational information systems</i>	1	17
	<i>Worker</i>	1	17
	<i>Work practices</i>	2	16
	<i>Commerce</i>	1	10
	<i>Market economies</i>	1	10
	<i>Work material</i>	1	10
TOTAL		15	179
Digital nomad attributes	<i>Global community</i>	1	10
	<i>Digital nomadism</i>	4	34
	<i>Hypermobility</i>	1	7
	<i>Lifhacking</i>	1	9
	<i>Personal knowledge management</i>	1	17
	<i>Value systems</i>	1	8
	<i>Ecology</i>	1	17
<i>Complex Nature</i>	1	10	
TOTAL		11	112
Research / knowledge	<i>Empirical studies</i>	2	17
	<i>Conceptual development</i>	1	17
	<i>Knowledge ecologies</i>	1	17
	<i>Knowledge management</i>	1	17
	<i>Ethnographic study</i>	1	10
	<i>Research frameworks</i>	1	10
	<i>Qualitative research</i>	1	8
<i>Knowledge work</i>	1	7	
TOTAL		9	103
Technological infrastructures	<i>Digital technologies</i>	2	27
	<i>Role of technologies</i>	1	10
	<i>Digital communication system</i>	1	9
	<i>Computer applications</i>	1	7
	<i>Computer supported cooperative work</i>	1	7
	<i>Online channels</i>	1	7
	<i>Interactive computer system</i>	1	7
<i>Safety nets</i>	1	7	
TOTAL		9	81

Source: Own elaboration, based on VosViewer results (Cluster 1)

Cluster 2 refers to the tourism approach, itself, in what concerns the definition of specific policies for the hotel industry, the production of studies and the creation of databases and the definition of working models, which produce cultural changes in destinations. It was considered that these may be the challenges facing tourism, so this dimension was named 'Trends'. Once again, the importance of network communication and social interaction is visualised, which

reinforces the evolution of digital nomads who are attracted by tourism to organise themselves into a community (Table 8).

Table 8. Mediating variables and their relevance of the 'Trends' dimension in the tourism perspective

Mediating variables	Items	Occurrence	Relevance
Future challenges	<i>Hospitality industry</i>	2	32
	<i>Data recording</i>	1	24
	<i>Database design</i>	1	24
	<i>Digital arithmetic</i>	1	24
	<i>Population statistics</i>	1	24
	<i>Thailand</i>	3	22
	<i>Policy making</i>	1	8
	<i>Social sciences</i>	1	8
	<i>Trend analysis</i>	1	8
	<i>Global perspective</i>	1	8
	<i>Chiang Mai</i>	1	8
	<i>Home based</i>	1	8
	<i>Working models</i>	1	4
	<i>Cultural Changes</i>	1	4
	<i>Future of work</i>	1	4
TOTAL		18	210
Communication and social interaction	<i>Information and communication technology</i>	2	29
	<i>Communication</i>	1	24
	<i>Information technology</i>	1	24
	<i>International conference</i>	1	24
	<i>Transparency</i>	1	24
	<i>Web and walk</i>	1	24
	<i>Social aspects</i>	1	8
	<i>Social media</i>	1	8
	<i>Social relations</i>	1	8
	TOTAL		10
Networks / equipment	<i>Technology transfer</i>	2	28
	<i>Mobile phones</i>	1	24
	<i>Mobile-phones users</i>	1	24
	<i>Technology</i>	1	24
	<i>Telecommunication equipment</i>	1	24
	<i>Telephone systems</i>	1	24
	<i>Computer networks</i>	1	2
TOTAL		8	150

Source: Own elaboration, based on VosViewer results (Cluster 2)

The mediating variables that are visualised in Clusters three and four were designated 'Lifestyle' and 'Social engagement', respectively (Hannonen, 2020). The 'Lifestyle' dimension emphasizes a life choice marked by an ideology and way of being in life, and the individual can be considered as the centre of this attention, being important to consider psychological factors to explain the relationship between digital nomads and tourism. These are closer to the reasons that drive the desire to travel and to adopt this lifestyle, as well as the attributes that these public values in

travel, destinations and tourist facilities they seek. It is clearly the psychological perspective that emerges here (Table 9).

Table 9. Mediating variables and their relevance of the 'Lifestyle' dimension, in the psychological perspective

Mediating variables	Items	Occurrences	Relevance
Life option	<i>Lifestyle</i>	4	31
	<i>Migration</i>	2	21
	<i>Mobility</i>	3	20
	<i>Nomadic people</i>	3	17
	<i>Ideology</i>	1	11
	<i>Immigrant</i>	1	11
	<i>Migrants experience</i>	1	10
	<i>Perceptions</i>	1	5
	<i>Quality of life</i>	1	5
TOTAL		17	131
Organizational strategy	<i>Telecommunication</i>	2	35
	<i>Entrepreneur</i>	2	16
	<i>Urbanization</i>	1	10
	<i>Corporate strategy</i>	1	6
	<i>Technological development</i>	1	6
	<i>Working conditions</i>	1	6
	<i>Implementation process</i>	1	5
	<i>Informal sector</i>	1	5
	<i>Geographical region</i>	1	4
TOTAL		11	93
Destination characteristics	<i>Indonesia (Bali)</i>	2	22
	<i>Portugal (Lisbon)</i>	2	20
	<i>Lesser Sundas islands</i>	1	11
	<i>Sundas isles</i>	1	11
	<i>Brazil</i>	1	10
	<i>Chiang Mai (northern region)</i>	1	6
	<i>Northern region Thailand</i>	1	6
	<i>Australia</i>	1	4
TOTAL		10	90
Research	<i>Tourism</i>	2	35
	<i>Ethnography</i>	2	17
	<i>Tourism behaviour</i>	1	11
	<i>Qualitative Analysis</i>	1	6
	<i>Tourism destination</i>	1	6
	<i>COVID-19</i>	1	4
TOTAL		8	79

Source: Own elaboration, based on VosViewer results (Cluster 3)

There is clearly an eagerness of this public for the discovery of new contexts, which stimulate mobility and facilitate the experience of new tourist experiences, because this is perceived by them as something that leads to the quality of life they aspire. This intrinsic need leads to the search for destinations that already have the infrastructures and services designed for the simultaneous achievement of work and leisure. A business strategy or, preferably, a territorial strategy, which combines the appropriate technological conditions with good telecommunications networks and more informal organisational processes, appear as essential

conditions to attract and retain the loyalty of these new tourists (Lee, Toombs & Erickson, 2019; Lee, Toombs, Erickson, Nemer, Ho, Jo & Guo, 2019). The results highlight the destinations most sought after by these audiences, in which Portugal is included, highlighting an appetite for urban tourism, which could be an opportunity to explore in city tourism. It also highlights the need for further research on this topic (Table 9).

The 'Social engagement' dimension highlights the concept of community. The dialogue with others (Forum analysis) and the feeling of belonging to a group of peers (Community model, Community-based) are highlighted. It is the sociological or group approach that stands out here. It is no longer just a question of knowing the individual motivations of the subjects, but of understanding how they move as a group, how they establish links, how they communicate and what means they use to do so. This question is of great importance in tourism because it opens a wider range of possibilities insofar as the supply can create specialised services for communities or groups of people, provided that it is equipped with the technological infrastructure they need (Table 10).

Table 10. Mediating variables and their relevance of the 'Social engagement' dimension, from a sociological perspective

Mediating variables	Items	Occurrence	Relevance
Economy / taxes	<i>Gig economy</i>	2	21
	<i>Location independent</i>	2	19
	<i>Budget control</i>	1	12
	<i>Comparative taxation</i>	1	12
	<i>Digital economy</i>	1	12
	<i>Economics</i>	1	12
	<i>Taxation in digital economy</i>	1	12
	<i>Personal income taxes</i>	1	12
	<i>Workers'</i>	1	12
TOTAL		11	124
Infrastructure	<i>Human computer interaction</i>	3	25
	<i>User interfaces</i>	2	19
	<i>Online platforms</i>	1	12
	<i>Digital infrastructure</i>	1	10
	<i>Working spaces</i>	1	10
	<i>Social infrastructure</i>	1	10
	<i>Information infrastructure</i>	1	9
	<i>Digital platforms</i>	1	9
	<i>Human engineering</i>	1	6
TOTAL		12	110
Community	<i>Digital nomads</i>	5	48
	<i>Digital lifestyle</i>	1	12
	<i>Professional aspects</i>	1	10
	<i>On-line Communities</i>	1	10
	<i>Sociotechnical systems</i>	1	10
	<i>Life balance</i>	1	10
	<i>Forum analysis</i>	1	9
	<i>Community model</i>	1	6
	<i>Community-based</i>	1	6
<i>Social engagement</i>	1	6	
TOTAL		14	127

Source: Own elaboration, based on VosViewer results (Cluster 4)

Another aspect that characterises the groups or communities is their own culture which gives them unity and distinguishes them from others. This cultural transformation of digital nomads from the moment they join these communities, triggers a commitment to a particular lifestyle that, in this case, results in a simultaneous and alternating experience between work and leisure (Chevtavaeva & Denizci-Guillet, 2021; Shawkat, Rozan, Salim & Shehzad, 2021; Tyutyuryukov & Guseva, 2021; Wang et al., 2020). This is an opportunity for tourism, if destinations create the conditions to receive not only digital nomads as individuals, but especially digital nomads as communities or groups. However, it is crucial to ensure that this digital and cultural transformation takes place, in the territories and in the tourism facilities, to welcome these groups of travellers, turning them into visitors and tourists (Reichenberger, 2018; Richards, 2015; Sutherland and Jarrahi, 2017). In addition to technological issues, the cost of living, taxes, foreign exchange and legislation related to entry and stay of foreigners are also aspects that facilitate or inhibit the attraction of this public.

CONCLUDING REMARKS

The studies on digital nomadism began in the scientific field of engineering and information technology, and today there are other approaches that study and explain this construct. The interest of the scientific community on digital nomadism, although research on this topic is still recent, has increased and the topic has been approached from different perspectives: technological, touristic, psychological, and sociological. Since the technological revolution and its impact on the various areas of society, the emergence of new professions and work tools, the physical workspace is no longer an obstacle to the significant growth of this new lifestyle. With the freedom of location and the search for paradisiacal destinations, such as Southeast Asia, many digital nomads have chosen destinations such as Bali, Ubud, among others, as their preferred destinations, and it is currently in this region that the most specialised services for these audiences can be found. Portugal is also one of the destinations that is already considered a reference in this area.

The evolution from the individual perspective to the community concept followed another kind of change, related to the characteristics of the digital nomad. In the beginning, there were mainly individual travellers driven by the discovery of new worlds, called "backpackers" (Richards, 2015). These were often people with low economic incomes who set out to discover, but have been replaced by entrepreneurial, economically empowered, informed digital workers who require specific, quality tourism services and infrastructures adapted to their lifestyle. This 'new' type of tourists is called flashpackers (Pitanatri, 2019), needs flexible and informal tourist services, along with physical infrastructures that simultaneously enable online connection and facilitate interaction with communities of belonging (On-line Communities; Co-workings) (Gomes, 2019; Mancinelli, 2018, 2020). Perhaps this feature of social interaction is one of the aspects that distinguish the digital nomads who practice tourism from those who only focus on remote work.

The results highlight the importance of the tourism supply managers presenting a differentiated strategy for these audiences, which meets their value system ('Digital nomad attributes'). To do so, they must have 'Organizational information systems', have a 'Human resource management' policy, improve 'Factors of production' and 'Work practices'. This modernisation work should be leveraged on studies and research on topics such as: 'Role of technologies', 'Digital communication system', 'Computer supported cooperative work', 'Online channels' and 'Safety nets'. It has also become clear that the relationship between digital nomads and tourism is an

'Ideology', a 'Lifestyle', marked by 'Quality of life' and 'Migrants experience', as shown in the results of Cluster 3, which explain the psychological factors that motivate the behaviour of this public. However, their need to organise themselves into a community ('Social engagement') poses new challenges to the supply side, no longer catering only for the needs of specific individuals, but organising themselves to receive groups who interact, exchange information, develop expectations and form joint opinions about the quality they perceive in tourism services ('Forum analysis', 'Community model', 'On-line Communities', 'Professional aspects', 'Informal sector', 'Technological development', 'Working conditions' and 'Perceptions').

In summary, this study contributes to the deepening of knowledge about the attributes of the digital nomads who feel more motivated to make tourism, offering clues to entrepreneurs of the tourism sector to implement some actions more directed to the expectations of this public. It also explains the type of equipment preferred by these tourists ('Mobile phones' and 'Computer networks'), because they allow them to 'Web and walk' associated to new forms of 'Working models'. These are some of the new challenges of tourism, underlying 'Cultural Changes'. Tourism cannot remain indifferent to the changes we are witnessing in the way we work ('Future of work'), nor to the reflection that these changes in the world of work have on the organisation and provision of tourism services.

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