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The Future Perspective of Tourism Statistics

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Abstract

This article discusses, in brief, the future of tourism statistics for users and producers of tourism statistics founded on literature. Tourism industry changes, novel technologies and methodological changes have affected tourism statistics in presentation and use. Henceforth careful consideration to novel data gathering approaches and analytics is essential in the future of tourism statistics. An integrated and attentive classification of tourism data (big data, indicators and statistics) will remain the main concern for tourism practitioners and scholars. The considerate integration and assimilation of industry data with tourists' digital traces, the proficiencies of data experts and the theoretic fortes of tourism academics will effect a remodel of tourism statistics setting. Big data is becoming integral to the tourism statistics. This article affords a transitory synopsis of the challenges and developments linked to usage of big data, tourism indicators and statistics in the future. The article proposes a new idea of tourism statistics by merging three diverse but corresponding facets of tourism data.

Key Words: Data sources, Statistics, Tourism, Tourism indicators, Big data

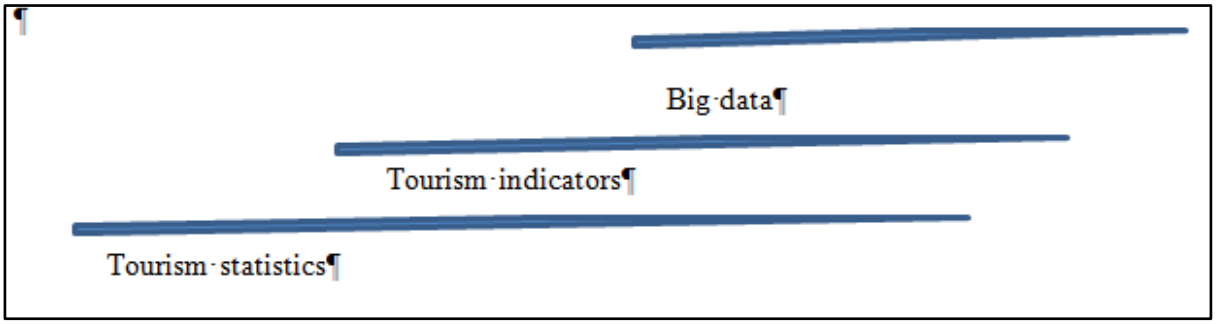
1. Introduction

The tourism statistics function in helping tourism industry decision makers and developers in appraising performances, setting goals and antedating forthcoming scenarios has been extensively recognised by scholars (Volo, 2020). This article input objects at deliberating the tourism data sources and use of the big data by producers and users of tourism data in the future. The necessity for tourism demand and supply statistics is well known and its usefulness has been recorded since the boom of travel industry after the Second World War beginning in the European countries and the phenomenon had to spread world over with United Nation World Tourism Organisation (UNWTO) superintending the industry (Lickorish, 1997). Turktarhan, Gopalan, and Ozkul (2021) indicate the uses of tourism data which include national tourism development and the aforementioned importance to the economy; destinations' predictions of tourist arrivals and tourism destination strategic marketing purposes.

Tourism also fascinated scholarly attention over eight deacades ago since the foundation of the Tourism Review Journal, which is a respected source till today as confirmed by Lesser et al., (2019) in the journal review.

Currently, publications by the UNWTO provide methodological regulation in the collection, presentation, usage of tourism statistics and also publishing world tourism statistics (UNWTO, 2021; UNWTO, 2008). Primarily, statistics were used generally with the focus of describing travel industry using different methodologies and over the years' academics, companies, associations and governments agreed on standard tourism indicators. Simple indicators of tourism are demand and supply that have been in use over the years and now complex tourism indicators such as sustainability, innovation and competitiveness have been developed (Castellani & Sala, 2010). Volo (2020) observed that tourism indicators despite becoming complex they still lack methodically to collect the required primary data and they lack accounting for the composite character of tourism which needs appropriate measurements and operationalisation of explored indicators. Therefore, notwithstanding the current changes, the impact of complex indicators to all inclusive theoretic contexts and the definite usage by the tourism operators and stakeholders, the indicators resultant classifications remain regularly undocumented and unclear (Volo, 2020; Shen, Poston, & Rezae, 2018). In the midst of these challenges, Big data is emerging which is a new way of measuring tourism and dominating in 21st century even in developing countries with advent of cheap technology. Internet of Things (IoT) and machine learning is influencing the development of big data (Shen, Poston, & Rezae, 2018). The evolution of tourism data is conceptually depicted in figure 1 below.

Figure 1: Tourism data evolution



The method engaged in this article can be defined as an epistemology positivism. Known the little quantity of current investigation on big data's use, mainly in tourism, considerable early investigation in this field requires to be qualitative, theory and concept construction in nature. This article therefore adopts such a method. Subsequent the method frequently implemented in positivist investigation, this article pursues to identify facts related with big data use in torism statistics and tourism indicators. We used three key bases for the rational in the theory development procedure: theoretical clarifications for ''hows'' and ''whys'' of big data flow; previous experiential findings and experience or experiences (Han, Li, Wu, & Chen, 2022). Amongst these, the logical perceptive is the greatest significant constituent of our reasons, which delivers theoretical concept. We correspondingly involved pragmatic investigations associated to big data practices and from additional associated fields. In addition to scholarly literature, we studied policy papers from government institutes and global agencies and reports from tourism industries and common media.

2. Methodology

The study followed an expert analysis of data usage in the tourism and hospitality industry from a world view. Expert analysis enables to get conclusive position of a phenomenon using expert opinion (Song & Liu, 2017). The analysis followed usage of data, sources of data and implied value of data in conducting tourism business.

Limited renowned data sources were consulted together with other scholars who are gurus in tourism data. A predictable conclusion was reached at using expert opinion.

3. Future perspective

Big data exceptionally huge or multifaceted data set have of late come in the domain of data bases for many facets of human undertakings that can be digitally traced. Turktarhan, Gopalan and Ozkul(2021) defined big data as high velocity, volume, and variety information resources that require cost effective, novel forms of data handling that enable improved decision making insight and automation of processes. The discussion on the features and utilisation of big data in tourism is fairly wide (Song J. , 2017). Certainly, often unofficial and unstructured big data are important for industries and scholars alike, as they allow tracing different tourist's behaviours, movements, themes of interest, preferences as well as expenditures patterns (Volo, 2020). Academics are at the present surveying big data sources to exploit the potent data sources for measurements of tourist movements in time and space, forecast tourism demand and evaluate their soundness as data sources (Song & Liu, 2017; Mariani & Borghi, 2018).

In Europe, a Eurostat (official statistics agency in Europe) has examined the usefulness of big data in supporting certified statistics, comprising tourism data (Eurostat, 2017). The full latent of big data is being studied; noticeably the latent to bring real time marketing activities is interesting to tourism stakeholders. Whereas intellectuals admit the requirement for appropriate data mining algorithms to allow correct use of the digital bits (Mariani & Borghi, 2018; Stylos & Zwiegelaar, 2019). The usage of big data in tourism statistics demand training of experts on data mining and algorithms in order to get valid statistics. A simple coordination of tourism statistics is not in place in many countries typically in the developing countries thus substantial effort is required, as these countries are getting a growing number of global tourists (Shereni & Chambwe, 2019). Modern changes in the development of complex indicators for tourism will carry on but require additional consolidation and incorporation of big data and traditional statistics. Producing common databases and imitable methodologies will allow researchers in different countries to use indicators in destinations of different sizes allowing officials to simply access and meaningfully use the indicators. Currently, tourists hints have become a vital foundation of data and the developing smart unsettling inventions in tourism will enable even additional collection of tourism related big data and thus the necessity for fairness and reciprocity in information as data exchanges will be supreme (Song J. , 2017). Ethical and legal use of these new data sources should be examined and ways for reciprocal advantageous usage to businesses and scholars should be considered. Data powerhouses are likely to emerge, providing online tourism statistics at a price to stakeholders.

Eurostat (2017) noted that the period of country statistical offices' domination on statistical data has left for good and now statistical data can be obtained with easy and even commercialised with the usage of big data analytics. Statistics from private and independent stakeholders in any democratic society is an essential public good, since is objective and independent from national polarised data statistics. National statistical authorities need to advance in training staff, working together with entities managing the data. For continuity of data dissemination there is need for long term partnerships by stakeholders. Perhaps the greatest ill reported part of tourism statistics is the measurement of sustainable tourism. Smart or big data can offer the omitted connection here. Sustainable tourism enquiry emphases on alleviating or remediating economic, social and environmental impacts on tourism. Nevertheless, there seems to be slight evidence to back that such methods are an encouragement to sustainable tourism and are being employed (Rahmadian, Feitosa, & Zwitter, 2021). Big data methodologies have been realistic to the area of tourism permitting for noteworthy development in provision of

real time statistics. The fast development of technology has stimulated human beings to incessantly appraise the methodological approaches of distributing information. In this day and age, new media based on the internet and mobile devices have become vital tools for the dissemination of information (Han, Li, Wu, & Chen, 2022). Tourism informatisation is a significant way to stimulate the growth of tourism and an imperative way to improve tourism competitiveness. With correct forecast of tourism supply and demand, infrastructure to support the tourism industry can be developed to cater for the projected needs of tourists like accommodation, transport and activities. Financing of the industry can be done on informed bases regarding potential return on investments based on statistics.

The drawbacks of data extraction, data sharing and data analytics have been investigated in fragmented, imperfect manner hence conceptual frameworks should be established to warrant buiding of theory, improve customisation and smart service supply (Turktarhan, Gopalan, & Ozkul, 2021). Enriched data analytics will permit usage of big data for not merely designing tourism online marketing and endorsements but similarly for demand forecast, preventive measures and disaster studies (Song J. , 2017). At the demise of old tourism measurements, tourism stakeholders should predict the huge prospect put together in real time, data obtained by tourists' digital hints with that of tourism companies' information systems and databases. An exhilarating time is foreseen in the near future in tourism industry of all sizes. As such we affirm prediction by Mariani(2020) that an innovative digital enterprise field might be formed within the hospitality and tourism industry based on internet of things(IoT) and artificial intelligence (AI). Protection of data and prevention of cybercrimes related to data mining and sharing is now of paramount importance in the dissemination of tourism statistics.

4. Conclusions

The significance of big data is dual; primarily, for statisticians as a possibly timelier or wealth data source and secondarily, for policy makers and businesses in an age of data determined decisions. The sluggish progression of tourism statistics has led to the procedural examination of those fascinated in indicators and has left space to the interruption by big data. The difficult remains however on moving the focus from a big to a quality smart usage of these data, introducing information levels, enabling real time usage of information and proper dissemination of movements. The considerate integration of tourists' digital hints with industry data, the abilities of data experts and the academic fortes of tourism scholars will affect aand reshape the tourism data spaces. An attentive combined system of tourism data (big data, statistics and indicators) shall remain of significance for practitioners and scholars as the tourism industry moves full into the big data domain, in this current 4.0 industry revolution. The concept of big data analytics now needs to be introduced in tourism and hospitality practitioners' training curriculum so that they are able to use it. The error of tourism statistics being available only from National Tourism Offices is coming to an end with use of big data. There is now need for progressive collaboration (sharing data bases) between tourism stakeholders for production of valid real time tourism statistics.

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