African Journal of Hospitality, Tourism and Leisure
ISSN: 2223-814X
2025, Vol. 14 No. 5 pp. 1191-1199

Navigating the Complexities of Tourism Statistics in Sub-Saharan Africa: Insights from Malawi

Mathews LAMBULIRA
Department of Tourism, Mzuzu University, Mzuzu, Malawi.
Email: lambulira.m@mzuni.ac.mw

Isaac MWALE
Department of Tourism, Mzuzu University, Mzuzu, Malawi.
Email: mwalejrisaac@gmail.com

Felix G. BELLO
Department of Marketing Management, University of Pretoria, Pretoria, South Africa, Email, felixbello2015@gmail.com

Isobel MANUEL
Department of Hospitality and Tourism, Namibia University of Science and Technology, Windhoek, Namibia, Email, imanuel@nust.na

Abstract

This study examines the data sources and collection methods employed for tourism statistics in Malawi, evaluating their alignment with international standards, particularly the United Nations' 2008 International Recommendations for Tourism Statistics. The study utilised qualitative research methods, including in-depth interviews with 42 key informants and document analysis. The study reveals a reliance on traditional data sources, including border entry/exit points, accommodation facilities, national domestic surveys, and the national population census. Accommodation data, despite its importance, suffers from sampling limitations, the exclusion of same-day visitors, and issues with double-counting. Border data collection, marked by manual and automated inconsistencies, lacks direct digital transfer to the National Statistical Office and neglects entry data. National surveys exhibit definitional inconsistencies in identifying domestic tourists. The census, while providing demographic and economic context, is limited by its infrequent nature and lack of tourism-specific depth. The study highlights gaps in stakeholder collaboration and data dissemination, underscoring the need for improved institutional coordination. Findings reveal a disconnect between current practices and the International Recommendations for Tourism Statistics 2008 guidelines, emphasizing the need for methodological refinement and enhanced data integration to ensure accurate and reliable tourism statistics for informed policy decisions in Malawi.

Keywords: Tourism statistics; challenges; developing countries; Malawi; sub-Saharan Africa.

How to cite this article: Lambulira, M., Mwale, I., Bello, F.G. & Manuel, I. (2025). Navigating the Complexities of Tourism Statistics in Sub-Saharan Africa: Insights from Malawi. African Journal of Hospitality, Tourism and Leisure, 14(x):1191-1199. DOI: https://doi.org/10.46222/ajhtl.19770720.710

Introduction

Tourism's multifaceted role in economic development underscores the critical importance of accurate and reliable statistical data. For tourism planners and decision-makers, comprehensive statistics are essential for performance evaluation, policy formulation, and strategic development (Chipumuro & Chikobvu, 2022; Volo, 2018). Recognizing tourism as a strategic domain, it becomes imperative to leverage specialised statistical information as a benchmark for policy formulation and steering the trajectory of tourism development (Adhinugroho et al., 2020). However, the inherent complexities of tourism, including its diverse activities and the challenges of data collection, often impede the attainment of robust statistical insights (Oliveira & Baracho, 2018; Saluveer et al., 2020). Issues like data duplication and the complexity of tracking tourism data further impede the accuracy and reliability of statistics (Oliveira & Baracho, 2018). This is particularly evident in developing countries like Malawi, where persistent challenges hinder the production of trustworthy tourism data (Lambulira & Bello, 2022; National Statistical Office, 2020). While global efforts are directed towards enhancing tourism statistics through initiatives like Tourism Satellite Accounts (Bregadze, 2021) and adherence to international guidelines such as the United Nations' 2008 International Recommendations for Tourism Statistics (IRTS), significant disparities often exist between recommended practices and on-the-ground realities. In response to these challenges, a shift from traditional to modern statistical methods has been observed (Saluveer et al., 2020; Vogelová et al., 2018).

While some scholars acknowledge the efficacy of internet-based tools in revitalizing tourism statistics, others caution against merely superficial improvements, advocating for a deeper reconsideration of foundational concepts (Jigang, 2019). The ongoing discourse underscores the necessity for continuous refinement of approaches and models to address shortcomings and enhance the relevance of tourism statistics (Gajdošík & Gajdošíková, 2016). Nevertheless, emerging sources of information hold promise in furnishing timely and accurate statistical insights (García et al., 2016). In Malawi, despite the recognition of tourism's strategic importance, a comprehensive analysis of the data sources and collection methods employed remains unexplored. This lack of scrutiny raises concerns about the accuracy and reliability of the country's tourism statistics, particularly about international standards. This study aimed to address this critical gap by conducting a thorough review of the data sources and collection methods used to compile tourism statistics in Malawi. Specifically, it examined the efficacy of data sources. The study evaluated these sources and methods against the principles and recommendations outlined in the 2008 IRTS, identifying methodological challenges, gaps in data integration, and opportunities for improvement. By analysing these aspects, this research provides valuable insights into the strengths and weaknesses of Malawi's tourism statistical framework, ultimately contributing to the development of more accurate and reliable data for informed decision-making and sustainable tourism development.

Literature review

Tourism planning and development necessitate robust statistical insights to inform decision-making and drive sustainable development (Laesser et al., 2020). Consequently, tourism statistics serve as a critical foundation for both operational tactics and long-term strategic initiatives. Recognising this importance, extensive scholarly research has investigated the intricacies of tourism statistical processes, aiming to identify deficiencies and refine methodologies (Volo, 2020). For instance, studies by Ahinugroho et al. (2020) and Carrera et al. (2018) have focused on enhancing the efficacy of tourism statistics through process analysis. Adhinugroho et al. (2020) explored strategies to mitigate bias in data collection by leveraging innovative techniques such as web scraping, while Carrera et al. (2018) concentrated on augmenting the credibility of tourism statistics through meticulous calibration of data collection mechanisms. Beyond process optimisation, ongoing scholarly discourse also centres on refining the definitions and conceptual frameworks underpinning tourism statistics (Bregadze, 2021). These scholarly exchanges are instrumental in fostering a deeper understanding of the nuances inherent in the measurement and interpretation of tourism-related data, ultimately contributing to the advancement of the field.

Tourism statistics, as a discipline focusing on quantifying tourism activities, are broadly analysed from two complementary perspectives: demand and supply (Abdullaeyeva & Nabiyev, 2024; EUROSTAT, 2014). These perspectives delineate the flow of statistical information, with demand-side statistics encompassing the consumption of tourism services and supply-side statistics assessing the provision of tourism resources (Abdullaeyeva & Nabiyev, 2024). Demand-side statistics are increasingly recognized as essential tools for marketing decisions and demand forecasting, providing crucial benchmarks for policy formulation (Li et al., 2019). However, challenges persist in defining key concepts such as the "usual environment" and tourism visits, which are fundamental for accurate interpretation (Antolini & Grassini, 2020). To enhance clarity, Chen et al. (2020) suggest segmenting markets based on visitor characteristics and trip nature. Furthermore, Delaney & MacFeely (2012) emphasize the critical role of demand-side statistics in forecasting trends within the inherently demand-driven tourism industry. Conversely, supply-side statistics focus on the production, supply, and tourism-related products and services (EUROSTAT, 2014; Li et al., 2019; UN, 2010). These statistics encompass both private and public sector organisations that offer tourism services (Aroca et al., 2017). Key analyses include evaluating production conditions, costs, and economic performance across sectors such as accommodation, travel packages, food and beverage, transportation, recreation, culture, and shopping (Delaney & MacFeely, 2012; Li et al., 2019; Mou et al., 2020; Stalmirska, 2024; UN, 2010). However, supply-side statistics face criticism regarding the difficulty in accurately measuring and attributing tourist purchases to the overall supply of goods and services within a nation (Aroca et al., 2017).

The diverse nature of tourism activities and the involvement of numerous stakeholders necessitate a wide range of information sources for measuring both sectoral and extra-sectoral parameters. Technological advancements have significantly expanded the landscape of available tourism data sources (Aroca et al., 2017; Volo, 2018). This evolution spans from traditional to advanced modern sources (Carrera et al., 2018; Vogelová et al., 2018), encompassing immigration borders, accommodation facilities, tourism businesses, tourism offices, communication systems, search engines, business-generated data, and crowd-sourced data (EUROSTAT, 2018). Notably, tourism and hospitality establishments, such as hotels, restaurants, and tour operators, provide services to both domestic and international tourists, and their generated statistics are integral to comprehensive tourism data (Murillo, 2018). Traditional data sources, primarily derived from national administrative records and international organisations, represent the foundational data sources (Vogelová et al., 2018). However, these administrative sources are often criticized for conceptual inconsistencies in defining tourism and related services (Antolini & Grassini, 2020). In contrast, modern data sources, including communication systems, search engines, business process-generated data, and crowd-sourced data, offer advantages such as broader sample coverage, real-time information, and nowcasting capabilities (Meeker & Hong, 2014). For example, GPS data sources, such as Google Location History (GLH), provide detailed insights into individual mobility while potentially enhancing data accuracy and privacy (Yu et al., 2019). Nevertheless, modern data sources also present challenges. Search engines, for instance, struggle with the differentiation of genuine and duplicate data (Antolini & Grassini, 2020). Similarly, web-based sources may suffer from data sparsity due to their reliance on voluntary user input, which can diminish the data's overall value (Ayeh et al., 2013).

Data collection methods in tourism statistics

Accurate and timely statistical information is paramount for the sustained growth of the tourism industry. Volo (2018) emphasizes the necessity of robust data collection methods for achieving precise tourism statistics, recognizing that the qualitative and quantitative attributes of tourism are inextricably linked. Shafique & Hato (2015) assert that logical, appropriate, and reliable travel and tourism data are contingent upon well-organised collection methods. Effective methodologies are lauded for their ability to capture data without undue pressure on respondents, thereby ensuring both accuracy and reliability (Mariani et al., 2018; Shafique & Hato, 2015). Numerous studies have underscored the importance of employing diverse data collection methods in tourism statistics, including face-to-face interviews, paper surveys, telephone surveys, computerized surveys, GPS tracking, web scraping, and social media monitoring (Mariani et al., 2018; Shafique & Hato, 2015; Volo & Giambalvo, 2008). While traditional methods such as face-to-face interviews and paper-based surveys remain foundational, they require modernization through the integration of contemporary techniques to enhance data accuracy (Shafique & Hato, 2015). Despite advancements in modern data collection, challenges persist due to the expansive nature of tourism activities and their interdependencies with other sectors (Shapoval et al., 2018). Volo & Giambalvo (2008) further highlight the variability of data collection and reporting systems across different tourism markets, cautioning that the replication of methodologies from other contexts can have detrimental implications. Consequently, a universally applicable standardized method remains elusive.

The primary data collection instruments employed in tourism statistics encompass visitor arrival/departure cards, accommodation statistics forms, questionnaires, interviews, visitor counting systems, surveys, and observations (Abdullaeyeva & Nabiyev, 2024; UNWTO, 2017). Notably, accommodation data and immigration entry/exit data are frequently utilized in the production of tourism statistics within developing countries (Prant & Tolkach, 2018). Accommodation statistics forms facilitate the assessment of occupancy rates, room rates, guest demographics, length of stay, and other pertinent economic indicators (Al Fahmawee & Jawabreh, 2022). Similarly, visitor arrival/departure cards capture visitor profiles and length of stay data at points of entry and exit, such as international airports and immigration land borders (Onah et al., 2021). In specific contexts, the collection of tourism statistics may necessitate the use of questionnaires, interviews, surveys, and observational methods. Questionnaires, comprising a structured series of questions designed to elicit information from respondents, are valued for their efficacy in measuring behaviours, attitudes, preferences, opinions, and intentions, particularly when dealing with complex data sets (Kumar, 2020). Interviews, involving structured or unstructured dialogues between respondents and enumerators, allow for controlled or free-form responses (Esner et al., 2022). Surveys, defined as instruments for gauging thoughts, opinions, and feelings through predefined questions, represent another critical data collection methodology (Nayak & Narayan, 2019). Finally, observational methods, involving the systematic observation and recording of phenomena, are also utilized (Kumar, 2020).

Stakeholder collaboration in tourism statistics

EUROSTAT (2017) identifies two primary stakeholders in the production of tourism statistics: national statistical offices and national tourism administrations. National statistical offices are responsible for interpreting and implementing standards within their respective jurisdictions and guiding the collection and interpretation of tourism data (Mun'im, 2021). National tourism administrations collaborate with these offices and other stakeholders to compile comprehensive tourism statistics (Nguyen & Rui, 2021; Rosselló et al., 2021). Collaborative partnerships among these stakeholders are essential for the compilation of comprehensive tourism statistics, given the diverse range of activities and entities involved in the tourism sector. Effective collaboration promotes consistency in reporting and enhances data accuracy (Turker et al., 2016). Furthermore, it facilitates improvements and innovations in the foundational frameworks and benchmarks of tourism statistics (Nguyen & Rui, 2021). While technological advancements offer significant opportunities for data collection, inter-stakeholder coordination is crucial for addressing associated challenges and adopting advanced platforms (Ondigo, 2020). Rosselló et al. (2021) underscore the importance of collaborative efforts between national tourism offices, national statistics offices, tourism service providers, and other stakeholders in mitigating deficiencies in tourism statistics reporting. Despite the critical importance of statistical information in the tourism sector, numerous obstacles impede the attainment of accurate data, particularly in developing countries. Challenges in the production of tourism statistics within these nations include inadequate funding, deficient institutional frameworks, limited data coverage, a lack of specialised expertise, and inconsistencies in data collection instruments (UNWTO, 2017; UNWTO, 2019; Yunus & Indrasari, 2017). These countries often struggle to maintain consistent, reliable, and up-to-date data due to resource constraints and incomplete data coverage (Sa et al., 2020; UN, 2010). Furthermore, inadequate infrastructure further complicates the collection of precise and timely data (Abdullah et al., 2014). However, technological advancements and enhanced global networks present significant opportunities to improve the accuracy and efficiency of data sources for tourism statistics in developing countries (Lorenzo et al., 2022; UNWTO, 2017). Modern data sources, such as payment card data, web search engines, social media data, internet data, crowdsourcing, and mobile network signalling, offer promising solutions to mitigate existing shortcomings in official statistics reporting (Lorenzo et al., 2022; Saluveer et al., 2020; UNWTO, 2017; Vogelová et al., 2018). For example, web search data is increasingly utilized to analyse and predict tourism activities, providing high spatial resolution insights (Antolini & Grassini, 2020; Wen et al., 2021). Additionally, ongoing research focuses on leveraging geo-localised mobile phone data to enhance the granularity of tourism measurements, offering real-time estimates for both domestic and international tourism (Raun et al., 2016; Saluveer et al., 2020). These technological advancements offer a pathway toward more accurate and comprehensive tourism statistics, enabling developing countries to overcome traditional data collection challenges.

Methodology

This study employed a qualitative research approach, utilizing an exploratory design, to gain an in-depth, contextual understanding of the challenges and dynamics impacting tourism statistics in Malawi (Priya, 2021). To ensure a comprehensive representation of key stakeholders, the research focused on a diverse group of participants (Berndt, 2020). The stakeholder groups included government officials, private tourism operators, tourists, and tourism experts from academic institutions in Malawi. The sample for the study was 42. According to Cobern & Adams (2020), the saturation point is when there are no new opinions from the respondents. Hennink & Kaiser (2022) suggested that saturation can be reached in 9-17 interviews. Cobern and Adams (2020) suggested that 11 or 12 interviews achieve 95% saturation, while Hennink & Kaiser (2022) recommended 9 to 17 interviews for data saturation. Purposive sampling was used to select individuals possessing substantial knowledge of tourism statistics, allowing for the capture of informed perspectives from those directly involved in tourism data collection and analysis (Berg & Lune, 2004). Data collection was primarily conducted through in-depth, semi-structured interviews, facilitating flexible and interactive exchanges with participants (Biggs et al., 2022). While the majority of interviews were conducted face-to-face to foster engaging and personal dialogues, some were conducted via telephone or online platforms to accommodate participant availability. In addition to primary data, secondary data were incorporated through a review of relevant documents, such as the Malawi Inbound and Outbound Tourism Reports (2018-2021), the Malawi Domestic and

Outbound Tourism Survey Report (2019), and the Malawi Population and Housing Census Reports (2008, 2018), providing contextual depth and supporting evidence for the study's findings.

Before any interview, informed consent was obtained from all participants. This involved providing a detailed explanation of the study purpose, methodology, potential risks and benefits, and the voluntary nature of their participation. Participants were assured that they had the right to withdraw from the study at any time without consequence. To ensure confidentiality, all data collected was anonymised, and identifying information was securely stored. Participants were assigned unique identifiers, and any direct or indirect identifiers were removed from transcripts and reports. Access to raw data was restricted to the research team, and all digital data was stored on password-protected devices. This study utilised thematic analysis to systematically analyse qualitative data, enabling a detailed exploration of the challenges inherent in the collection and reporting of tourism statistics in Malawi. The analytical process followed a structured methodology, encompassing transcription of interviews, generation of initial codes, the grouping of codes into overarching themes, refinement and review of themes, and mapping of findings to research questions and relevant literature (Braun & Clarke, 2019; Sundler et al., 2019). Document analysis was also performed to evaluate policy reports, statistical guidelines, and institutional documents. This process facilitated the contextualization of participant narratives by cross-referencing them with existing tourism data collection frameworks and institutional reports (Bowen, 2009).

Results and discussion

Demographics of study participants

A total of 42 people participated in the study. As shown in Table 1, these participants were from the Department of Tourism (DoT), National Statistical Office (NSO), Department of Immigration and Citizenship Services, Department of National Parks and Wildlife, accommodation facilities, UN Tourism (TSA experts), international tourists, domestic tourists, Mzuzu University, and the Malawi University of Business and Applied Sciences. The study took advantage of the UN tourism experts who were on a mission in the country during the data collection at that particular time (hence the inclusion in the study). This resulted in an eighty-four percent (84%) response rate. The diverse participant pool provided a broad spectrum of insights, enriching the study's findings. 57.1% of the study participants were male, while 42.9% were female.

Table 1: Number of participants per stakeholder group

Stakeholder Group	Pseudonyms	Male	Female	Total
Department of Tourism	DOT000	3	2	5
National Statistical Office (NSO)	NSO000	2	0	2
Department of Immigration and Citizenship	IMD000	1	2	3
Department of National Parks and Wildlife	DNPW000	3	0	3
Registered accommodation facilities (Hotels and lodges)	ACC000	2	6	8
International tourists	ITM000	4	2	6
Domestic tourists	DTM00	5	3	8
Tourism experts (Mzuzu University and Malawi University of Business and Applied Sciences)	TEM000	3	2	5
UN Tourism (TSA experts)	UNT000	1	1	2
Total		24	18	42

Data sources and collection methods for tourism statistics in Malawi

The study's findings indicate that Malawi's tourism industry relies on a variety of traditional data sources to compile tourism statistics. These sources include border entry and exit points, accommodation facilities, national domestic surveys, and the National Population Census. These methods of data collection align with traditional sources and approaches (Carrera et al., 2018; Vogelová et al., 2018). Among these, accommodation data and immigration entry/exit data are the most frequently used in Malawi, supporting the observation by Prant & Tolkach (2018) that these two data sources are commonly relied upon in the preparation of tourism statistics in developing countries.

Accommodation facilities

Accommodation facilities serve as crucial sources of tourism statistics in Malawi. Participants in the study emphasized that data from these establishments provide valuable insights into both domestic and international tourism trends. The DoT collects data every month from licensed accommodation providers using a standardized statistical form. These forms are distributed via email or in person to ensure broad participation. In line with prevailing tourism regulations, accommodation operators are required to complete and submit these forms, which capture data on room occupancy rates, employment figures, income levels, guest profiles, and the purposes of guests' visits. One participant highlighted the critical nature of this data source: "The accommodation owners are supposed to record every guest they receive, and this information provides details about the guests and their purpose of visit. It is these pieces of information that we use for tourism statistics" [Participant DOT003]. As Al Fahmawee & Jawabreh (2022) noted, this data collection approach aligns with global practices, as similar forms are utilized in other countries to document tourist behaviour and assess economic impact. Data from accommodation establishments are typically analysed using a sampling approach, whereby 20 percent of establishments in each district are selected for inclusion. This method facilitates the estimation of room and bed occupancy rates at the district level. The sampled units are randomly selected, and the collected data are subsequently entered into Excel for cleaning, weight assignment, and analysis. While this sampling technique enhances efficiency, it may introduce limitations concerning representativeness, as non-sampled units may exhibit different characteristics from those included in the analysis. Gajdošík & Gajdošíková (2016) identified several challenges associated with accommodation-based tourism statistics. One major issue is the exclusion of same-day visitors, whose economic contributions to the tourism sector remain unaccounted for in accommodation data. In Malawi, this omission is further compounded by the presence of unregistered accommodation facilities, which complicates the accuracy of tourism statistics. Additionally, the risk of double-counting arises when travellers stay in multiple establishments during a single trip, with each check-in recorded as a separate visit. This can inflate visitor numbers and distort key metrics, such as the average length of stay. These challenges are particularly relevant in Malawi, where no clear mitigation measures are currently in place, potentially compromising the accuracy and reliability of the country's tourism statistics. Utilisation of accommodation data for tourism statistics in Malawi demonstrates a partial alignment with IRTS 2008. While the monthly collection of standardized data from licensed establishments captures essential tourism indicators, significant deviations exist. The sampling approach, limited to 20% of establishments per district, raises concerns about representativeness, contradicting the guide's emphasis on robust methodologies. Critically, the exclusion of same-day visitors, the presence of unregistered accommodations, and the risk of double-counting travellers directly oppose IRTS 2008 principles of comprehensive data collection and accurate visitor counts.

Entry and exit border points

The collection of international tourism data in Malawi is primarily structured around entry and exit border points to the country, where the Department of Immigration and Citizenship is responsible for collecting visitor information through exit cards for non-residents. For decades, border-based tourism measurement has been a standard method for estimating international visitor numbers (Frent, 2016). Malawi has twelve active border posts, with automated data collection procedures implemented at four of the busiest points, including airports. The remaining border posts rely on manual data collection, where entry and exit forms are completed using physical cards. In these border posts, a standard set of migration-related questions, such as country of residence, nationality, occupation, purpose of migration, age, gender, and trip origin, is recorded alongside travel-specific data, including length of stay, mode of transport, accommodation type, main destination, and expenditure. Until 2017, all border posts operated manually, requiring visitors to fill out paper-based questionnaires at both entry and exit points, with immigration officers responsible for data recording. The use of standardised exit cards enables the capture of fundamental demographic and travel-related indicators such as sex, age, nationality, country of residence, and purpose of entry. However, contrary to Frent's (2016) recommendations, Malawi does not employ such tourism-specific interviews to complement entry and exit card data. Tourist surveys are required to successfully implement the Tourism Satellite Account (TSA) (Sharma & Olsen, 2005). The high cost associated with such surveys (Frent, 2016) likely explains their absence, given the limited funding allocated to tourism development in the country (Lambulira & Bello, 2022; Ntoi & Ndlovu, 2025).

Although Malawi asserts that its tourism statistics are collected and produced following UN Tourism guidelines, significant discrepancies persist when assessed against the standards outlined in the IRTS 2008. The assessment of inbound tourism statistics through entry and exit cards reveals methodological and operational weaknesses, particularly in data collection and the estimation of total inbound expenditure. Reliance on manual data collection and limited digitisation has led to inefficiencies and inaccuracies, while ongoing automation at border points has introduced further inconsistencies. The National Statistical Office (NSO) lacks direct access to detailed digital databases from border control agencies and instead receives only aggregated tables, preventing comprehensive analysis. Non-automated ports still depend on manual card counting, heightening the risk of misclassification. Moreover, the NSO processes only departure data, leaving entry data unused, which hinders accurate estimation of inbound tourism flows. The absence of a direct digital border database transfer exacerbates these issues, while the misclassification of non-tourism travellers and failure to distinguish same-day visitors from overnight tourists further undermines the precision required by the IRTS 2008.

National domestic tourism survey

Malawi introduced national surveys to measure domestic tourism as part of efforts to strengthen its tourism statistical framework. Domestic national surveys are conducted jointly by the DoT and NSO. The first and only national domestic tourism survey was carried out between 7 September and 4 November 2019 with financial support from the African Development Bank (ADB). The ADB has played a crucial role in strengthening Malawi's statistical capabilities, directly influencing tourism governance and policy formulation. Its financial support enabled Malawi to conduct its first domestic tourism survey, an initiative that would have been unfeasible within the government's limited tourism budget. Lambulira & Bello (2022) emphasize the constrained funds allocated to the Ministry of Tourism, highlighting that such a survey would not have been possible without external assistance. Participants highlighted that the national tourism surveys aim to collect detailed information on trips made by residents, encompassing both same-day visits and overnight stays. During the data collection process, both questionnaires and interviews were identified as crucial tools for gathering information. A representative from the DoT commented on the initiative: "We started conducting national surveys aimed at gathering data on various tourism-related activities. We typically develop questionnaires administered primarily using hard copies, though we are exploring computerised modes of delivery." [Participant DOT002]. Participants expressed varying perspectives regarding the effectiveness of the survey. Participants commended the initiative as a step toward improving domestic tourism statistics; however, concerns were raised about methodological inconsistencies, particularly in defining domestic tourists. A key challenge identified was distinguishing between tourism-related trips and routine travel. One academic participant noted that the survey tended to classify nearly all domestic travellers as tourists, potentially inflating figures and compromising data accuracy: "I noticed that the report included almost everyone as a domestic tourist, which compromised the accuracy of the findings. Perhaps this is an area where academic institutions could contribute, especially during the survey design stage" [Participant TEM002]. The issue highlighted reflects broader methodological challenges in domestic tourism measurement, where differentiating tourism activities from general mobility remains complex (Antolini & Grassini, 2020; Oliveira & Baracho, 2018; Saluveer et al., 2020; Romero Palop et al., 2019).

National population census

The findings of this study highlight the national population census as a critical source of tourism statistics in Malawi, particularly for capturing demographic and economic data relevant to domestic travel. The DoT, in collaboration with the NSO, strategically incorporates tourism-related questions into the census, ensuring that national tourism parameters are embedded within the broader dataset. This integration underscores a growing recognition of the census as a multifaceted tool, not only for population monitoring but also for assessing tourism dynamics. A participant from the DoT underscored the pivotal role of the population census in capturing data relevant to tourism: "As a department of tourism, we are asked to submit questions to be included during national population census questionnaires, and we use such data to prepare and predict travel patterns and assorted demographic variables mainly for domestic tourism" [Participant DOT004]. Since its inception, census methodology in Malawi has undergone significant evolution. Initially reliant on traditional pen-and-paper methods, the adoption of Computer-Assisted Personal Interviewing (CAPI) in the 2018 census marked a pivotal transition toward digital data collection, enhancing both efficiency and accuracy. This shift aligns with global trends in statistical data collection, where digital tools have demonstrably improved data reliability and reduced processing time (UNECE, 2020). However, despite these advancements, the census remains primarily focused on core demographic indicators such as age, sex, education, migration, economic activity, and housing, while tourism-related questions constitute a relatively minor component of the dataset. A key strength of the national population census, as emphasised by study participants, lies in its capacity to provide valuable insights into domestic tourism, particularly regarding the volume and profile of same-day visitors and other tourism activities that do not rely on formal accommodation facilities. Domestic tourism serves as the backbone of tourism demand in many destinations, yet it receives comparatively less attention than international tourism in both academic and governmental research (Ragab et al., 2020). Leveraging tourism data from the national census is especially significant given the challenges associated with measuring domestic tourism, which often lacks formal records compared to international travel (UNWTO, 2020). Furthermore, the ability to utilize economic data from the census to assess travel expenditure patterns enhances its utility in tracking the socioeconomic dimensions of tourism. In this regard, Malawi's approach aligns with broader international efforts to harness existing national datasets for tourism monitoring, thereby reducing the cost and complexity of standalone tourism surveys. This is particularly relevant in the development of tourism satellite accounts, which underscore the importance of integrating data from multiple sources (Eurostat, 2019).

Nevertheless, several limitations of the census as a tourism data source were identified. A primary concern is the long interval between censuses, typically conducted every ten years, which results in outdated statistics that may fail to reflect contemporary tourism dynamics. Additionally, participants noted that despite the census data's potential relevance, it remains underutilized in tourism policy discussions, indicating a gap between data availability and its practical application in tourism management. This gap reflects a broader challenge in developing countries, where institutional constraints and limited technical capacity often hinder the effective use of statistical information (Jerven, 2013). In our attempt to compare Malawi's practice in utilising population censuses as a source of tourism data, we noted that the IRTS 2008 does not provide detailed guidelines specific to housing censuses and tourism statistics. Regardless, we made a number of observations based on the available information in the IRTS 2008. The inclusion of tourism-related questions within the census, facilitated by collaboration between the DoT and NSO, aligns with the guide's emphasis on leveraging diverse data sources such as population and housing censuses.

Nature of collaboration when producing tourism statistics in Malawi

The study established the involvement of multiple stakeholders in the compilation of tourism statistics in Malawi, reflecting the intricate nature of tourism as an economic sector that intersects with a wide range of administrative and research institutions. Key players in this process include the NSO, the DoT, the Department of Immigration and Citizenship Services, the Department of National Parks and Wildlife, and accommodation establishments. Each entity has a distinct and complementary role in data collection, processing, or dissemination, forming a dynamic and interdependent network that drives the reporting of tourism statistics. This aligns with existing literature, which underscores the collaborative nature of tourism statistics, where national tourism administrators partner with national statistics offices and other stakeholders to collect, analyse, and report tourism data (Mun'im, 2021; Rosselló et al., 2021; Nguyen & Rui, 2021). Such collaboration is crucial for leveraging resources and expertise from various stakeholders, each playing a unique role (Ondigo, 2020). The NSO and DoT play central roles in the production and coordination of tourism statistics, providing the methodological frameworks that guide data collection and processing. Their responsibilities extend beyond data compilation to ensuring adherence to standardised reporting protocols. The findings indicate that these institutions are also actively involved in capacity-building initiatives, such as conducting training sessions for stakeholders to ensure consistency in data collection methodologies. This structured approach mirrors global best practices, where national statistical agencies serve as the backbone of tourism data systems, setting data collection standards to improve the reliability and comparability of tourism statistics (UNWTO, 2022).

Collaboration between the NSO, DoT, and other stakeholders also extends to the dissemination of tourism statistics. The findings show that finalized reports are made available via official websites and tourism offices, with some secondary stakeholders, such as national parks, facilitating the distribution of these reports. However, the effectiveness of this dissemination strategy is uncertain, particularly in ensuring that tourism operators and policymakers can access timely and actionable insights. Similar concerns about gaps in tourism statistics dissemination have been raised in other contexts, where such gaps have impeded evidence-based decision making (Li et al., 2005). Despite the evident collaboration, the study highlights several operational inefficiencies that undermine the smooth production of tourism statistics. Participants noted instances of delayed or incomplete data submissions, especially from data providers, which point to broader challenges in multiagency data collection. As noted by one participant from the National Statistical Office: "We have made strides in our collaboration with our colleagues to produce tourism statistics, although occasional delays or incomplete information from other stakeholders remain challenges we must address" [Participant NSO002]. Gajdošík & Gajdošíková (2016) noted that inconsistent reporting timelines and insufficient data quality control mechanisms are major obstacles to the accuracy of statistical outputs in many countries. The finding that stakeholders in Malawi struggle to align their data collection and reporting schedules signals that institutional coordination remains a significant challenge within Malawi's tourism statistical system.

Conclusion

This study has provided a comprehensive overview of the data sources and methodological challenges inherent in Malawi's tourism statistics collection. While the country utilizes a variety of traditional sources, including accommodation data, border entry/exit points, national surveys, and the population census, significant gaps and inconsistencies remain. The analysis revealed a critical misalignment with the UN's IRTS 2008, highlighting the need for substantial improvements in data collection practices, methodological rigor, and stakeholder collaboration. Key challenges, such as the exclusion of same-day visitors, the lack of direct digital data transfer, definitional inconsistencies in domestic tourism surveys, and the infrequent nature of the population census, impede the production of accurate and reliable tourism statistics. Moreover, the study underscored the importance of enhanced stakeholder coordination and data dissemination to ensure that valuable insights are effectively utilized for policy and planning. Moving forward, Malawi must prioritize the adoption of digital data collection methods, refine its sampling techniques, and address the definitional ambiguities in its surveys. Implementing robust data integration strategies and strengthening institutional capacity are also crucial for aligning with international standards. By addressing these challenges, Malawi can develop a more robust and reliable tourism statistical framework, enabling informed decision-making and fostering sustainable tourism development. Future research should focus on several key areas to improve tourism statistics in Malawi. Investigating modern data sources, such as mobile phone positioning, GPS, and social media, could enhance data accuracy and reliability. A comprehensive capacity gap analysis is needed to identify technical skill deficiencies within Malawi's tourism statistics workforce, facilitating targeted capacity-building efforts. Examining successful collaboration models from other countries could provide valuable insights for improving stakeholder cooperation. Additionally, research should explore whether underfunding of tourism statistics is due to budget constraints or issues related to prioritization within the Ministry of Tourism. Lastly, a detailed examination of methodological challenges and opportunities related to supply-side tourism statistics is crucial for gaining a more comprehensive understanding of the tourism sector in Malawi.

References

Abdullaeyeva, M. K. & Nabiyev, D. K. (2024). Data Collection in the Field of Tourism and Diversification, and Classification of the Basic Concept of Tourism Statistics. *Central Asian Journal of Education*, *3*(1), 66-69. https://doi.org/10.5281/zenodo.10559500

Abdullah, S., Razak, A. A. & Jaafar, M. (2014). Public Tourism Infrastructure: Challenges in the Development and Maintenance Activities. In *SHS Web of Conferences* (Vol. 12, p. 01096). EDP Sciences. https://doi.org/10.1051/shsconf/20141201096

Adhinugroho, Y., Putra, A. P., Luqman, M., Ermawan, G. Y., Takdir Mariyah, S. & Pramana, S. (2020). Development of Online Travel Web Scraping for Tourism Statistics in Indonesia. *Information Research*, *25*(4). https://doi.org/10.47989/irpaper885

Al Fahmawee, E. A. D. & Jawabreh, O. A. (2022). A Study Architectural and Intangible Environment Affecting Occupancy Rate of Five Stars Business Hotel in Amman. *Journal of Environmental Management & Tourism*, *13*(2), 530-545. https://doi.org/10.14505/jemt.v13.2(58).22

Antolini, F. & Grassini, L. (2020). Issues in Tourism Statistics: A Critical Review. *Social Indicators Research*, *150*(3), 1021-1042. https://doi.org/10.1007/s11205-020-02361-4

Aroca, P., Brida, J. & Volo, S. (2017). Tourism Statistics: Correcting Data Inadequacy. *Tourism Economics*, *23*(1), 99-112. https://doi.org/10.5367/te.2015.05

Berndt, A. E. (2020). Sampling Methods. *Journal of Human Lactation*, *36*(2), 224-226. https://doi.org/10.1177/08903344209068

Biggs, R., De Vos, A., Preiser, R., Clements, H., Maciejewski, K. & Schlüter, M. (2021). *The Routledge Handbook of Research Methods for Social-ecological Systems* (p. 526). Taylor & Francis.

Bowen, G. A. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal*, *9*(2), 27-40. https://doi.org/10.3316/QRJ0902027

Braun, V. & Clarke, V. (2019). Reflecting on Reflexive Thematic Analysis. *Qualitative Research in Sport, Exercise and Health*, *11*(4), 589-597. https://doi.org/10.1080/2159676X.2019.1628806

Bregadze, G. (2021). Towards the Introduction of Tourism Satellite Account- Case Study in Georgia. *Globalization and Business*, 6(11), 127-132. https://doi.org/10.35945/gb.2021.11.018

Carrera, C. F., Valverde, M. I. & Gimeno, M. V. (2018). Calibration as a Tool to Enhance Coherence at Regional Level in Tourism Statistics. *15th Global Forum on Tourism Statistics* 28-30 November 2018. https://doi.org/10.1080/2159676X.2019.1628806

Chen, X., Cheng, Z. F. & Kim, G. B. (2020). Make It Memorable: Tourism Experience, Fun, Recommendation, and Revisit Intentions of Chinese Outbound Tourists. *Sustainability*, *12*(5), 1904. https://doi.org/10.3390/su12051904

Chipumuro, M. & Chikobvu, D. (2022). Modelling Tourist Arrivals in South Africa to Assess the Impact of the COVID-19 Pandemic on the Tourism Sector. *African Journal of Hospitality, Tourism and Leisure*, *11*(4), 1381-1394. https://doi.org/10.46222/ajhtl.19770720.297

Cobern, W. W. & Adams, B.A.J. (2020). When Interviewing: How Many Is Enough? *International Journal of Assessment Tools in Education*, *7*(1), 73-79. https://doi.org/10.21449/ijate.693217

Delaney, J. & MacFeely, S. (2012). Extending Supply-Side Statistics for the Tourism Sector: A New Approach Based on Linked Administrative Data. *Journal of the Statistical and Social Inquiry Society of Ireland*, *43*, 136.

Esner, F., Matthiessen, L. E. & Welch, A. A. (2022). Identifying Future Study Designs for Mental Health and Social Well-Being Associated with Diets of Cohorts Living in Eco-Regions. *International Journal of Environmental Research and Public Health*, *20*(1), 669. https://doi.org/10.3390/ijerph20010669

EUROSTAT (2014). *Methodological Manual for Tourism Statistics* Version 3.1. Available at https://ec.europa.eu/eurostat/document/38598/6454997/KS-GQ-14-013-EN-N.pdf/166605aa-c900-40c4-b9F7-59c297154277

EUROSTAT**.** (2017). *Eurostat-OECD Compilation Guide on Inventories: 2017 Edition.* Luxembourg: Eurostat. Available at https://doi.org/10.1787/9789264283060-en

EUROSTAT. (2019). *Tourism Satellite Accounts (TSA) in Europe*. Publications Office of the European Union.

Frenţ, C. (2016). Measuring Tourism at the Border: A Critical Analysis of the Icelandic Context. *Scandinavian Journal of Hospitality and Tourism*, *16*(sup1), 87-97. https://doi.org/10.1080/15022250.2016.1244597

Gajdošík, T. & Gajdošíková, Z. (2016). Current Challenges in Tourism Statistics: Tourism Economic Importance Measurement. In *International Scientific Conference FERNSTAT*. https://www.library.sk/arl-umb/en/detail-umb_un_cat-0254073-Current-challenges-in-tourism-statistics-Tourism-economic-importance-measurement/

García, F. C., Mascuñano, J. P., Izquierdo, M. & Velasco, M. (2018). Quality Implications of the Use of Big Data in Tourism Statistics: Three Exploratory Examples. *BEIO, Boletín de Estadística e Investigación Operativa*, *34*(2), 138-149.

Hennink, M. & Kaiser, B M. (2022). Sample Sizes for Saturation in Qualitative Research: A Systematic Review of Empirical Tests. *Social Science and Medicine*, 292, 2-9. https://doi.org/10.1016/j.socscimed.2021.114523

Jigang, B. A. O. (2019). Thoughts on Introducing Spatial Scale Perspective into Tourism Statistics. *Tourism and Hospitality Prospects, 3*(1), 1. https://doi.org/10.12054/lydk.bisu.109

Kumar, R. (2020). *Methods of Data Collection*. Research Methodology & Protocol Design, Mewar University. https://doi.org/10.13140/RG.2.2.26435.22561

Laesser, C., Bieger, T., Pechlaner, H., Keller, P. & Buhalis, D. (2020). 75 years of Tourism Review: Survival by Transformation: A Perspective Article. *Tourism Review*, *75*(1), 4-7. https://doi.org/10.1108/TR-02-2019-0069

Lambulira, M. & Bello, F.G. (2022). Challenges to Tourism Development in Sub-Saharan Africa. A Case of Malawi. *Journal of Environmental Management and Tourism*, *2*(58), 391 - 402. https://doi.org/10.14505/jemt.v13.2(58).09

Li, S., Liu, A. & Song, H. (2019). Does Tourism Support Supply-Side Structural Reform in China? *Tourism Management*, *71*, 305-3114. https://doi.org/10.1016/j.tourman.2018.10.022

Cavallo, L., Cerasti, E., Righi, A., Tuoto, T., Valentino, L., Bertocchi, D., Mantegari, G. & Zamengo, B. (2022). Exploring Mobile Network Data for Tourism Statistics: The Collaboration Between Istat and Vodafone Business Italia. *Rivista Di Statistica Ufficiale*, *3*, 43-76. https://dx.doi.org/10.1481/istatrivistastatisticaufficiale_3.2022.02

Mariani, M., Baggio, R., Fuchs, M. & Höepken, W. (2018). Business Intelligence and Big Data in Hospitality and Tourism: A Systematic Literature Review. *International Journal of Contemporary Hospitality Management*, *30*(12), 3514-3554. https://doi.org/10.1108/IJCHM-07-2017-0461

Meeker, W. Q. & Hong, Y. (2014). Reliability Meets Big Data: Opportunities and Challenges. *Quality Engineering*, *26*(1), 102-116. https://doi.org/10.1080/08982112.2014.846119

Mou, N., Yuan, R., Yang, T., Zhang, H., Tang, J. J. & Makkonen, T. (2020). Exploring Spatio-Temporal Changes of City Inbound Tourism Flow: The Case of Shanghai, China. *Tourism management*, *76*, 103955. https://doi.org/10.1016/j.tourman.2019.103955

Mun'im, A. (2021). Measuring the Economic Contribution of Tourism: An Improvement in Indonesia. In *Proceedings of the International Conference on Data Science and Official Statistics* (pp. 559-567). https://doi.org/10.34123/icdsos.v2021i1.187

National Statistical Office. (2020). *Malawi Domestic and Outbound Tourism Survey Report-2019.* Zomba: National Statistical Office.

Nguyen, N. & Rui, Y. (2021). A Comparative Study - China's and Vietnam's Inbound Tourism Marketing Strategies. https://urn.fi/URN:NBN:fi:amk-2021060313750

Ntoi, R. & Ndlovu, J. (2025). Uplifting Rural Livelihoods Through the Application of CSR on Eco-lodges. *African Journal of Hospitality, Tourism and Leisure*, *14*(1), 53-62. https://doi.org/10.46222/ajhtl.19770720.585

Oliveira, R. d. & Baracho, R. M. (2018). The Development of Tourism Indicators Through the Use of Social Media Data: The Case of Minas Gerais, Brazil. *Information Research*, *23*(4). Available at https://informationr.net/ir/23-4/paper805.html

Onah, V. C., Asuquo, M. & Ugwueze, M. (2021). Transborder Migration of Foreign Terrorist Fighters and Security in Nigeria, 2015-2020. *University of Nigeria Journal of Political Economy*, *11*(2). Available at https://www.unjpe.com/index.php/UNJPE/article/view/101

Ondigo, Q. A. (2020). Causes of Occupational Stress Among Public Officers in Immigration Department, Nairobi County, Kenya. *International Journal of Novel Research in Life Sciences, 7*, 14-27.

Priya, A. (2021). Case Study Methodology of Qualitative Research: Key Attributes and Navigating the Conundrums in Its Application. *Sociological Bulletin*, *70*(1), 94-110. https://doi.org/10.1177/0038022920970318

Ragab, A., Smith, S., Ragab, A. M. & Meis, S. (2020). Domestic Tourism Statistics: A Comparative Analysis of Demand Data Coverage and Method. *Tourism Review International*, *24*(1), 5-21. https://doi.org/10.3727/154427220X15791346544752

Raun, J., Ahas, R. & Tiru, M. (2016). Measuring Tourism Destinations Using Mobile Tracking Data. *Tourism Management*, *57*, 202-212. DOI: https://doi.org/10.1016/j.tourman.2016.06.006

Romero Palop, J. D. D., Murillo Arias, J., Bodas-Sagi, D. J. & Valero Lapaz, H. (2019). Determining the Usual Environment of Cardholders as a Key Factor to Measure the Evolution of Domestic Tourism. *Information Technology & Tourism*, *21*(1), 23-43. https://doi.org/10.1007/s40558-018-0130-y

Rosselló, J., Sansó, A. & Virbickaitė, A. (2021). How Local Tourism Managers Can Benefit from National Surveys: Estimating Tourism and Restaurant Expenditures for Small Market Segments. *Current Issues in Tourism*, *24*(24), 3433-3449. https://doi.org/10.1080/13683500.2021.1910632

Saluveer, E., Raun, J., Tiru, M., Altin, L., Kroon, J., Snitsarenko, T., Aasa, A. & Silm, S. (2020). Methodological Framework for Producing National Tourism Statistics from Mobile Positioning Data. *Annals of Tourism Research*, *81*, 102895. https://doi.org/10.1016/j.annals.2020.102895

Shafique, M. A. & Hato, E. (2015). A Review of Travel Data Collection Methods. In *Proceedings of the 17th International Conference on Civil Engineering and Applied Mechanics, Paris, France* (pp. 27-28).

Shapoval, V., Wang, M. C., Hara, T. & Shioya, H. (2018). Data Mining in Tourism Data Analysis: Inbound Visitors to Japan. *Journal of Travel Research*, *57*(3), 310-323. https://doi.org/110.1177/0047287517696960

Sharma, A. & Olsen, M. D. (2005). Tourism Satellite Accounts: Implementation in Tanzania. *Annals of Tourism Research*, *32*(2), 367-385. https://doi.org/10.1016/j.annals.2004.08.002

Stalmirska, A. M. (2024). Local Food in Tourism Destination Development: The Supply-Side Perspectives. *Tourism Planning & Development*, *21*(2), 160-177. https://doi.org/10.1080/21568316.2021.1928739

Sundler, A. J., Lindberg, E., Nilsson, C. & Palmér, L. (2019). Qualitative Thematic Analysis Based on Descriptive Phenomenology. *Nursing Open*, *6*(3), 733-739. https://doi.org/10.1002/nop2.275

Turker, N., Alaeddinoglu, F. & Can, A. S. (2016, July). The Role of Stakeholders in Sustainable Tourism Development in Safranbolu, Turkey. In *2016 International Conference on Hospitality, Leisure, Sports, and Tourism* (pp. 415-426). Chiba Institute of Technology.

UNECE. (2020). *Recommendations on the 2020 Round of Censuses of Population and Housing*. United Nations Economic Commission for Europe.

United Nations (UN) (2010). International Recommendations for Tourism Statistics. Available at https://unstats.un.org/unsd/publication/Seriem/SerieM83revls.pdf

UNWTO. (2017). Tourism Statistics Capacity Building Program in Asia and the Pacific. Available at https://www.unwto.org/asem-initiative-tourism-statistics-capacity-building

UNWTO. (2019). *International Tourism Highlights, 2019 Edition*. UNWTO. https://doi.org/10.18111/9789284421152

UNWTO. (2020). UNWTO Highlights Potential of Domestic Tourism to Help Drive Economic Recovery in Destinations Worldwide. Available at https://www.unwto.org/news/unwto-highlights-potential-of-domestic-tourism-to-help-drive-economic-recovery-in-destinations-worldwide

Vogelová, M., Chaloupka, R. & Abrhám, J. (2018). Potential of New Data Sources in Tourism. *Slovak Journal of Public Policy and Public Administration*, *5*(2). Retrieved from https://sjpppa.fsvucm.sk/index.php/journal/article/view/83

Volo, S. (2018). Tourism Data Sources: From Official Statistics to Big Data. *The Sage Handbook of Tourism Management, SAGE, London*, 193-201.

Volo, S. (2020). Tourism Statistics, Indicators, and Big Data: A Perspective Article. *Tourism Review*, 75(1), 304-309. https://doi.org/10.1108/TR-06-2019-0262

Volo, S. & Giambalvo, O. (2008). Tourism Statistics: Methodological Imperatives and Difficulties: The Case of Residential Tourism in Island Communities. *Current Issues in Tourism*, *11*(4), 369-380. https://doi.org/10.1080/13683500802140398

Wen, L., Liu, C., Song, H. & Liu, H. (2021). Forecasting Tourism Demand with an Improved Mixed Data Sampling Model. *Journal of Travel Research*, *60*(2), 336-353. https://doi.org/10.1177/0047287520906220

World Travel & Tourism Council. (2024). *Malawi Travel & Tourism Economic Impact Factsheet*. WTTC. Available at https://researchhub.wttc.org/factsheets/malawi

Yu, X., Stuart, A. L., Liu, Y., Ivey, C. E., Russell, A. G., Kan, H., Henneman, L.R., Sarnat, S.E., Hasan, S., Sadmani, A. & Yu, H. (2019). On the Accuracy and Potential of Google Maps Location History Data to Characterize Individual Mobility for Air Pollution Health Studies. *Environmental Pollution, 252*, 924-930. http://dx.doi.org/10.1016/j.envpol.2019.05.081

Yunus, E. & Indrasari, M. (2017). Opportunities and Challenges of the Tourism Industry. *International Journal of Economic Research, 14*(7), 277-291. https://doi.org/10.1016/j.envpol.2019.05.081