Compilation of Nepal Tourism Satellite Accounts: Opportunities and Challenges

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Abstract:
Compilation of Nepal Tourism Satellite Accounts (NTSA) is very important to provide with the necessary information for the policy process and measuring the achievements towards national and global development goals. The NTSA is also important because the exact contribution of tourism industries in Nepalese economy is yet to be estimated. Obviously, the compilation of Tourism Satellite Accounts (TSA) requires quality data on tourism demand and supply. In order to have tourism data, we need to find out the best available data sources. In this regard, the practice of various countries shows that there are number of different sources that can provide the tourism statistics in an efficient way. To this end, this paper aims to explore various potential data sources either existing in the National Statistical System (NSS) or new to the system. Therefore, literatures explaining big data as source of tourism statistics are reviewed to examine the usability of them in the compilation of NTSA. In addition, the practicability of digital survey and mobile positioning techniques are studied to ensure whether modernizing statistical business process is applicable in the NSS of Nepal. Similarly, the pros and cons of conventional statistical surveys are also reviewed to comprehend the optimum possible data sources for compiling the NTSA. Finally, this paper identifies the opportunities and challenges for the compilation process of NTSA that would be the great road map to strengthen not only the tourism statistics but also the entire NSS of Nepal.

Keywords: Big data, Demand, Modernizing, Supply, Surveys

1. Introduction:
Nepal became a key destination of international tourists since 1951 when government of Nepal opened for international tourists. The number of tourists visiting Nepal for various purposes have been significantly increasing after the successful summit of Mount Everest first time by Edmond Hillary and Tenzing Norgye Sherpa in 1953. As a result, tourism becomes one of the most important economic industries in Nepal. Tourism plays an important role towards achieving most national and global development goals specifically the SDGs 8, 12, and 14. Government of Nepal strongly emphasis to strengthen and develop tourism industry by announcing various policies and programs such as Tourism Policy 2008, Visit Nepal 2020. In addition, the 15th periodic plan prepared by National Planning Commission (NPC) clearly identifies the development and expansion of quality tourism service as one of the important means of socio-economic transformation of the country (NPC, 2019). The effective implementation of these tourism policies and programs require the disaggregated tourism specific information. Therefore, to supplement the tourism information, Nepal is planning to develop an experimental NTSA and this paper is developed to see the best data sources for it.

2. Methodology:
Review of literature is the main method to develop this article. I employ qualitative research design to review on international principles and practices. I communicate and discuss with the agencies involving in keeping administrative records to gather required information. Moreover, the entire study is fully directed by the principles and recommendations of World Tourism Organization through the International Recommendations for Tourism Statistics 2008, Tourism Satellite Account: Recommended Methodological Framework 2008 and International Recommendations for Tourism Statistics Compilation Guide 2008.
3. Results:
3.1 Stock Analysis:
A TSA should provide information on the tourism demand in terms of goods and services acquired by
visitors and the supply either by domestic industries or imports (United Nations, 2010). Moreover, the
TSA highlights the link between non-monetary information on tourism and economic information. As
recommended by United Nations (2010), a complete set of TSA tables incorporates the aforesaid
information on tourism. This subsection presents the existing situation on tourism related official
statistics.

3.1.1 Inbound Tourism:
At present, there is no complete and robust information on inbound tourism in Nepal. However,
Ministry of Culture, Tourism and Civil Aviation (MoCTA) publishes tourism statistics every year. The
report includes some inbound tourism related information such as tourist arrival, length of stay, purpose
of visit, royalty received, foreign exchange earnings, some economic indicators of hotel and restaurant,
flights and passenger movements (MoCTA, 2019). The data on tourist arrival is collected through the
administrative records of Department of Immigration (DoI) that keeps the record of visitors from the
passport swiping machine for air passengers and land port registers for non-Indian visitors. Obviously,
the passport information never qualifies a visitor as tourist in one hand, and on the other, the missing
Indian visitors by land mislead the volume of total tourist arrival. Moreover, the arrival of non-resident
Nepalese is also excluded from the tourist arrival. Therefore, the data on tourist arrivals available so far
has serious limitations both on quality and quantity. In addition, central bank of Nepal provides the data
on foreign exchange earnings that captures the payments made through use of credit cards and formal
money exchange transactions. Nevertheless, the expenditure made through other channels, and informal
transactions, are currently not being calculated. Moreover, this type of expenditure does not necessarily
conform to the expenditure the TSA table intends to measure for example the expenditure per
products is missing.

3.1.2 Domestic and Outbound Tourism:
The awareness of the economic importance of domestic tourism has grown significantly in Nepal.
Unfortunately, there is no data available on domestic tourism and information about flows of domestic
visitors. To some extent, the information on outbound tourism is available through the administrative
records of DoI and central bank. But this information is incomplete and inadequate as per the
requirement of TSA as discussed earlier. Moreover, the data available in the balance of payment (BoP)
does not exactly refer to tourism expenditure, but will be useful for triangulation after having the results
of other sources.

3.1.3 Production Accounts:
Central Bureau of Statistics (CBS) publishes the national accounts statistics (NAS) every year in line
with the System of National Accounts 1993.1 The published national accounts tables present only the
production accounts of 15 broad industries that cannot fulfill the requirements of TSA production
accounts. It is because TSA seeks the production accounts of disaggregated tourism industries by
disaggregated consumption and non-consumption products (see Table 5 of TSA from United Nations,
2010). In addition, CBS prepared supply and use tables (SUTs) for the years 2004/05 and 2010/11. The
SUTs of 2010/11 has production accounts of 60 industries by 81 products.2 But a TSA requires more
segregated data with four-digit International Standard Industrial Classification (ISIC) codes that can
meet the most tourism industries classified as in TSA. In fact, the four-digit ISIC code also cannot meet
the accommodation tourism industries classified as in TSA in some cases but a simple manipulation

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1 “The System of National Accounts (SNA) is the internationally agreed standard set of recommendations on how to compile
measures of economic activity in accordance with strict accounting conventions based on economic principles” (United
Nations, 1993).

2 See SUTs 2010/11 from https://cbs.gov.np/supply-and-use-table-2010-11
based on tourism surveys can mitigate this limitation. In this regard, NTSA has an opportunity that CBS is planning to update SUTs for 2017/18 (NPC, 2019). NTSA will get full set of production accounts if new SUTs could incorporate all the products and tourism industries classified as in TSA.

3.1.4 Employment in Tourism Industries:
In 2014, MoCTA conducted Tourism Employment Survey that covers most of tourism industries such as accommodation, travel agencies, trekking agencies, rafting agencies, airlines, sports, paragliding, sky diving, and ultra-light. Similarly, the results of the survey cover broad scope of tourism employment information such as distribution of employee by genders, age, education level, employment status, nature of employment, salary, (see MoCTA, 2014). However, the survey failed to capture the information on number of hours worked by status in employment. In addition, this survey did not cover all types of tourism industries such as tourist vehicles, restaurants and other small-scale tourism establishments and adventure industries, including bungee jumping. Therefore, the information from this survey might not be adequate for the NTSA but will be applicable for the triangulation of data with other sources.

CBS has completed third round of Nepal Labor Force Survey (NLFS III) in 2017/18. NLFS III is a household survey, so it includes the formal and informal sectors, which is very useful for the NTSA project. Nevertheless, Nepal yet to identify the total number of employees in the tourism related industries. CBS can provide segregated data of employment in the tourism related industries from this survey. Moreover, CBS is in the phase of conducting fourth round Nepal Living Standard Survey (NLSS) in 2020/21. NLSS also covers the employment statistics. Similarly, CBS conducts Annual Household Survey (AHS) every year other than the years of NLSS and NLFS. AHS also provide the data on employment. Therefore, NLFS will provide the necessary employment information to the NTSA and the other surveys: NLSS, AHS and tourism employment survey will be used either to update or contrast the information obtained from NLFS.

3.1.5 Non-monetary Indicators:
There are some existing data sources for non-monetary indicators related to the tourism industries in Nepal. Example includes Economic Census 2018 conducted by CBS can provide the number of establishments and average number of jobs.\(^3\) MoCTA (2019) can provide the information on accomodation, flights and passengers. Similarly, Nepal Land Transport Survey 2013 conducted by CBS provides the information on land transport.\(^4\)

3.2 Analysis of Alternative Sources:
Recent years witness an expansion of alternative data sources which are more widely available. Big data including mobile positioning, satellite imagery are good examples of such data sources that might be available at low cost with high frequency and complement the conventional surveys. Istat (2015) shows a good correlation among the estimation based on mobile phone data and administrative archives. Another study by Eurostat (2016) shows that mobile positioning data can be a good supplement rather than the replacement of official tourism statistics. Ruslani, Madjida, and Nughroho (2019) suggest to use mobile positioning data combining with conventional surveys. However, getting mobile positioning data is challenging due to privacy issue in one hand, and on the other, the data cannot capture various indicators such as number of beds, expenditure by items. Other several studies such as Lestari, Esko, Rayner, and Widyasanti (2019); Hasyayati, Indriani, and Lestari (2018); Putra and Wulandari (2018) have studied about the use of big data for tourism statistics. Other scholars such as Hermanto, Ziaurrahman, Bianto, and Setyanto (2018); Cluster, Pardo, Cooper and Tajeddini (2013) have studied on big data from social media for tourism statistics. Overall, these studies either predict some tourism indicators or tourist perceptions, concerns, and sentiment towards tourist destinations. In fact, these types of information cannot be used directly while compiling TSA. Upadhaya, (2018) states that big

\(^3\) See data at: [https://cbs.gov.np/economic-census/](https://cbs.gov.np/economic-census/) as of April 25, 2020

data are more useful in estimating growth rather than creating the benchmark statistics. The author also argues that the internet users in Nepal are less than 20 percent, showing that there is limited scope and coverage of big data. In addition, there is no reliable official statistics in Nepal to verify the various information drawn from big data at the moment. Moreover, TSA is not a simulation but accounting (United Nations, 2010). Therefore, the use of information from big data cannot be recommended at least for the experimental NTSA at the moment.

3.3 Potential Data Sources for NTSA:
Having knowledge on stock and alternative data sources, this section recommends the best possible data sources required for NTSA. At present, Nepal need two new surveys and one SUT to compile the experimental NTSA (see Appendix 1). Regarding Inbound Tourism Expenditure Survey (ITES), Indriani, Hasyyati and Kanti (2019) state that the digital surveys are efficient in terms of cost, time and coverage. Therefore, with the co-ordination of internet service provider, visitor exit digital survey can be conducted at international airport of Nepal. For the overland visitors, there are seven entry points for non-Indian and more than 30 entry point for Indian visitors. Out of 30 entry points, only 11 entry points have custom office from where Indian visitors can cross the border by taking vehicles but rest of 19 entry points that are informal and Indian visitors can cross the border without vehicles at any time. Tablet Assisted Personal Interview (TAPI) with structured questionnaire would be the best option to save time, cost and get the good quality data at the moment for overland visitors. But the main problem for these surveys is that the frame available from DoI has limitation as discussed earlier. On the other, due to open border sharing between India and Nepal, there is no record of Indian visitors at all. However, there is no option at the moment to use sampling frame from DoI for non-Indian visitors and selecting randomly the respondents from the real time overland Indian visitors. But in the days to come, it is very important to introduce the arrival and departure card for all non-Indian visitors and develop registration system for overland Indian visitors at the entry points. NTSA also requires a household survey measuring the Domestic Tourism. To be efficient, this survey also can be conducted using TAPI. In addition, it is recommended to incorporate the DTS module in next round of NLSS and then after. Regarding purposed new SUTs, it would be better if CBS consider the industrial and product classification as in TSA framework.

3.4 Opportunities and Challenges:
TSA has a long history of its successful story since 1994 when Canada published its first TSA. Till date more than 60 countries have already produced or are compiling the TSAs (UNWTO, 2010). Lesson learnt by these countries is the great opportunity to NTSA. The Indian TSA would be the great supportive document to NTSA because India and Nepal not only share border but has similarity in various social and cultural behavior. With the collaboration of neighboring countries, mirror data can also be used because outbound of one country is the inbound of other. On the other, various plans and policies such as Periodic Plan of Nepal 2019-2023, National Tourism Strategic Plan 2016-205, Tourism Policy 2008 have clearly spelled out to develop TSA. In this regard, Nepal has already endorsed National Strategy for the Development of Statistical System (NSDS) that visualizes a strong statistical system in the country. Similarly, a new statistical bill is tabled in parliament and hopefully the it becomes a law very soon. The new act will facilitate to explore new data sources and make strong coordination mechanism among stakeholders. A high-level TSA technical committee headed by secretary of MoCTA is working actively that establish a strong co-ordination among data providers is good news to the NTSA. In addition, MoCTA is in the process of reviving Tourism Information Management System using modern technology. In contrast, there are some challenges too. Major challenge for the NTSA is to capture the information from the overland Indian tourists who cross border via informal entry points. Similarly, weak statistical competency in the area of TSA is also a major challenge to NTSA. Unavailability of proper sampling frame for inbound tourism is a technical problem to design a robust sampling technique for the survey. The electronic transaction of foreign resident tourists directly to the foreign resident industries make difficult situation to capture the actual demand and supply of tourism products even for national accounts.
4. Conclusion:
This study has identified seven major data sources for the first experimental TSA of Nepal. The identified sources are DTS, ITES, NLSS, NAS, Economic Census, Statistical Report of MoCTA, and SUTs. Among them DTS and ITES are new to the statistical system of Nepal whereas the rest six sources are already exiting in the system. However, slight modification of the sources seems to be essential in future plan such as incorporating DTS module in NLSS, using digital survey technique for ITES, further disaggregation of SUTs to meet the requirement of TSA. At the moment, big data are not appropriate to the experimental NTSA but continue efforts on studying the usability of big data in tourism statistics is important to the system. NTSA has a lot of opportunities that can be grabbed to deal with the challenges identifies so far. It is very important to Nepal that special care should be given while selecting sample for the aforesaid new surveys because of unavailability of proper sampling frame. It is also believed that after having the first experimental TSA of Nepal, the NSS will supply many important information to monitor various development indicators as well as provide feedback in policy process. On the other, new data sources will be added to the NSS and learn important experiences to enhance the statistical competency.

References:
### Appendix 1 NTSA tables and purposed data sources

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