

2020 Asia–Pacific Statistics Week

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A New Approach Towards Utilizing Administrative Data Sources

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Abstract:

For a small population like Bhutan, administrative data play an important role and is also a more reliable source of information rather than administering annual surveys. In an effort to streamline proper collection and utilization of administrative data on the Bhutanese labour market, the Statistics Division under the Ministry of Labour and Human Resources (MoLHR) in 2015 initiated the development of the Bhutan Labour Market Information System (BLMIS), a web-based, real time data system, to gather employment statistics from all formal sectors of the economy.

The system was developed with an aim to have access to up-to-date data and generate more reliable, timely and internationally comparable official employment statistics and also serve as a tool to assess the statistics generated through the Annual Labour Force Surveys (LFS) conducted by the National Statistics Bureau. The BLMIS features “accessibility” wherein policymakers, planners and the general public have access to this real time labour market data. The system also functions as a “central repository” of all employment statistics in the formal sectors of the economy in Bhutan. Due to the dynamic nature of the labour market indicators, the system also functions as a “unified collaboration platform” and is integrated with various other systems which generate employment statistics. Integration is mostly done with the Census and Civil Registration System for registering unemployed job seekers and the Foreign Workers System to assess the trend of current foreign workers by occupations working in Bhutan. The system also serves as a “micro-data system” to track employment details at the individual level and has inbuilt data validation, reporting and visualization mechanisms. Further, the system also has features on tracking a person’s current employment status and past employment histories by utilizing the person’s unique citizenship identity number.

Through the initiation of this system, the MoLHR Statistics Division has been able to plan employment policies at the national level utilizing these data sets and as well as monitor the employment scenario in the formal sectors of the economy. The system has also enhanced and established closer collaboration among the stakeholders in the production, use, and dissemination of official employment statistics and improve quality, compliance, and coordination. In the long run, the BLMIS is expected to become the nation's recognized and respected focal point for labour and employment information and serve as the institutional memory of the country's labour administration system.

Keywords: System, Accessibility, Central Repository, Unified Collaboration Platform, Micro-data

1. Introduction:

Administrative data have become increasingly useful and ever more important as governments continue to encourage big data analytics and implement evidence-based decision making. Administrative data are primarily collected for the purpose of record keeping on various aspects which includes but not limited to population, income, assets or employment. Administrative databases contain enormous volumes of information updated at regular intervals without much additional expense on data collection and generally captures the whole population depending on the purpose of the administrative requirements. Connelly et al. (2016) claims that administrative social science data enables a more effective way of studying policy changes, social problems and societal issues which are otherwise not

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possible through the regular social surveys. In addition, the large size of administrative social science data makes it possible to go even further and study the sub-groups. Administrative data registers and compilations have been instituted since time immemorial. The earliest accounts of administrative data registers were established by the Nordic countries in the 1960s with the introduction of a unique personal identification which began with population and income statistics and in the years that followed, several other administrative data registers were established (United Nations, 2007). For instance, New Zealand implemented the use of electronic card transaction data for estimating households' tourism expenditure which was previously based on the Domestic Travel Survey. Likewise, for social statistics, data were extracted from the government administrative datasets and for economic statistics, data were primarily drawn from tax data of the revenue office (Stats NZ, 2018). In the case of Bhutan, one early account of compiling administrative data dates back to 1946 during the reign of the Second King when His Majesty voiced his concern about the burden of tax. It was after this historical event that administrative data on respective dzongkhags (districts) and individual households were collected in order to reform the tax system in the country (Ura, 1995). Today, after almost seven decades, we have collected enormous volumes of administrative data on every account of our activities and developmental programs. One such example is the administrative data on employment and unemployment records maintained by the Ministry of Labour and Human Resources (MoLHR) in Bhutan.

The MoLHR is the custodian of the Labour and Employment Act and is mandated to create gainful and quality employment opportunities through its engagement in the formulation and implementation of policies related to employment, human resources development, and facilitating conducive working conditions and environment (GNHC, 2018). As is the case in other developing countries, rising youth unemployment and job hopping is a big challenge and is at the cornerstone of the Government's policies and programs. And the proportion of educated youth not getting employment is also on the rise with increasing number of university graduates not getting employment. On the other hand, more than 33% of our industries have indicated that they are not able to find the right people for the job (National Workforce Plan 2016-22). Bhutan is also undergoing a rapid labour market transition, wherein job generation is seeing a visible shift from the government sector to the private sector. In an effort to complement the indicators of the LFS, the MoLHR in 2015 initiated the integration of various administrative data systems managing employment and unemployment statistics. Hence, BLMIS was developed as an inclusive system to function as the central employment repository interface. The administrative data generated through the BLMIS comprises of a complete set of information on the job seekers entering the labour market as well as on the existing workforce and enterprises in the formal sectors of the economy. In comparison to the indicators published by the LFS, the BLMIS considerably enhanced evidence-based approach towards developing reliable employment programs and policies, workforce planning and other human resource development strategies.

This paper, particularly focuses on the integration of the various administrative data systems within various government agencies in Bhutan and attempts to complement the indicators reported by the Labour Force Surveys (LFS) conducted by the NSB. Section II of this paper presents the integration mechanisms of the system. Section III presents a brief summary of the employment statistics from the BLMIS and discussions and conclusions are presented in Section IV.

2. Methodology:

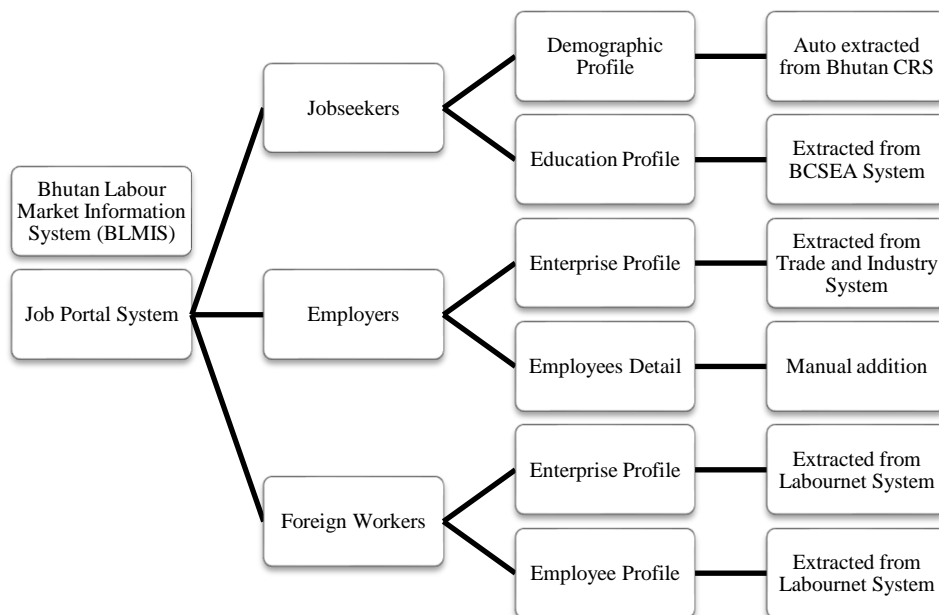
Figure 1 illustrates the structural flow of administrative data which are extracted from the various systems managed by different government agencies. The BLMIS is the umbrella system for dissemination of information and the Job Portal System (JPS) is the primary database. All other systems are integrated to the JPS through the three major components viz. the job seekers' section, employers' section and the foreign workers' section.

The job seekers’ section is integrated to the Bhutan Civil Registration System (CRS) managed by the Ministry of Home and Cultural Affairs. Every Bhutanese citizen is given a unique personal citizenship identity number after registering in the civil registration system. Job seekers registering in the JPS enter this unique personal citizenship identity number and all other demographic characteristics, including name are extracted automatically from the Bhutan CRS. Likewise, job seekers only enter the enrolment number in the education profile and the academic results are extracted from the Bhutan Council for School Examinations and Assessment (BCSEA) System. However, only education profile up to high school are extracted as the tertiary level is managed by another institution which is not yet integrated with the JPS.

The employers’ section is integrated to the Trade and Industry System, which registers and issues all business licenses in Bhutan. An employer registers in the JPS with the business license and the details of the enterprise, including its main economic activity is extracted from the Trade and Industry System. The employers feed in the unique personal citizenship identity number of each of their employees and as in the case of the job seekers, the employee’s name and demographic profile is automatically uploaded. However, the employers need to fill in the occupation profile, the nature of employment, date of appointment and the monthly salary.

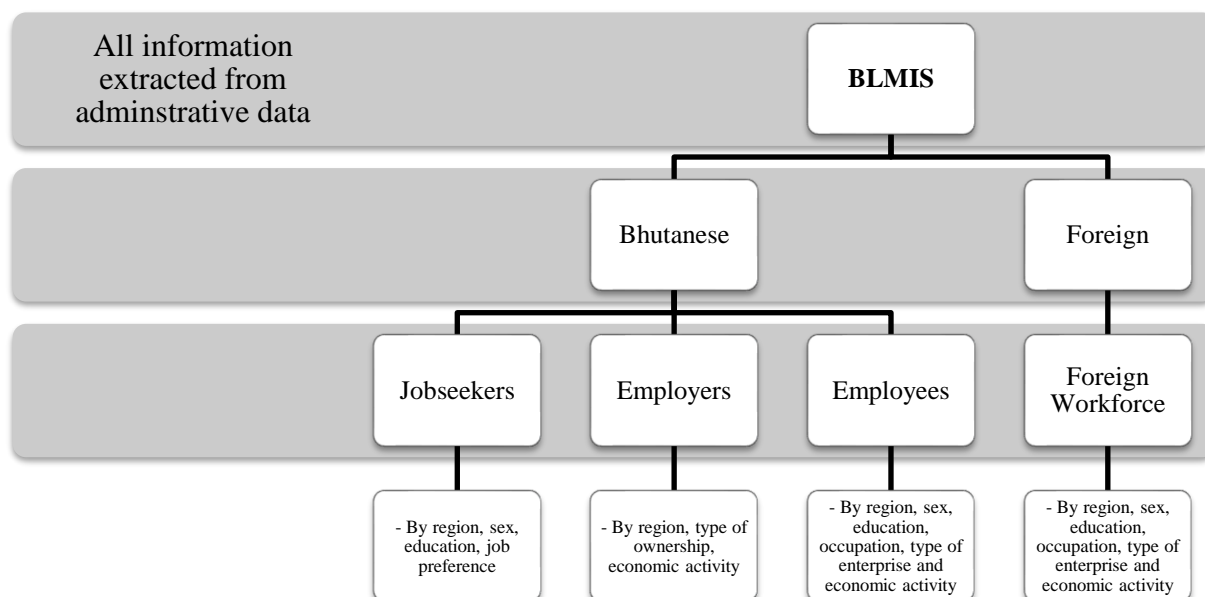
The foreign workers’ section is integrated with the Labournet System, which is also managed by the MoLHR. Each foreign worker is given a unique work ID number upon approval of their work permit. The foreign workers are categorized by their demographic and occupational profile as well as their sector of employment and enterprise details.

Figure 1: Structural flow of data extraction



As illustrated in Figure 2, BLMIS generates all the key labour market indicators which are extracted through the various administrative data systems integrated to the JPS. The indicators are further classified by their nationality and sub-groups at the individual or enterprise level which are not presented in the LFS reports. Similarly, the LFS also does not provide any information on the labour market transitions. Due to its annual frequency, the LFS does not capture the short, frequent employment to employment, employment to unemployment transitions. For this, the LFS needs to be conducted every quarter on the same individuals similar to a panel survey. However, the panel data collection has its own drawbacks. On the other hand, administrative dataset easily identifies this kind of labour market transitions. The administrative data in the BLMIS, wherein each observation has a unique personal identification number makes it capable to capture this information.

Figure 2: Information Generation Mechanism



Although the statistics generated from BLMIS and LFS do have a few differences, this is particularly due to the discrepancies in the different definitions of employment and unemployment used. The LFS is based on the standards and definitions of the ILO. In the LFS, employed persons are defined as those who have worked for at least one hour in the past one week prior to the survey reference period, whereas the BLMIS defines employed as those who are on the payroll of the enterprise and does not include the short-term apprentices or interns. Likewise, in terms of employment, the BLMIS does not fully capture the self-employment category or the one-person own account workers. Similarly, the LFS defines unemployed persons as those who are without work, willing to work and available for work within the next 2 weeks of the survey period, whereas, the BLMIS defines unemployed persons as those who are without work. The other source of discrepancy in the statistics is the possibility of the BLMIS registering inactive workers especially students as unemployed. On the other hand, the BLMIS may not sometimes register all the unemployed persons if the individual does not have the unique citizenship identity number due to issues with census registration.

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3. Result:

This section provides a brief account of how the BLMIS generates administrative labour market statistics. For simplification and to easier understand the process, only the employment statistics are presented. As of December 2019, a total of 13,522 enterprises and 41,039 employees have been recorded in the BLMIS as shown in Table 1. While validating this number with that of the LFS 2018 report wherein 73,657 employees have been estimated for the private and corporate sectors, the BLMIS captured 56% of the total employees. Enterprises in the manufacturing, wholesale and retail trade, accommodation & food service activities and the education services have a more representation as compared to other major economic activities. This is because the registration purposely focused on these sectors as it had the highest share of employees and also had the capacity to generate more employment in the future. In terms of dzongkhag/district representation, the majority of the enterprises were captured in Thimphu (6,343) followed by Chukha (2,497) and Paro (1,118). This employment numbers from the administrative datasets along with those from the LFS reports have been extensively used by the MoLHR in preparing the annual job plans and human resource development strategies which include re-skilling and up-skilling of the existing workforce.

Table 1: Number of enterprises and employees by major economic activity, 2019

Sl.	Major Economic Activity	Enterprises	Employees		
		Total	Male	Female	Total
1	Agriculture, forestry and fishing	251	351	240	591
2	Mining and quarrying	109	702	164	866
3	Manufacturing	2,476	4,598	2,240	6,838
4	Electricity, gas, steam and air conditioning supply	812	1,423	459	1,882
5	Water supply; sewerage, waste management and remediation activities	45	45	34	79
6	Construction	812	2,126	750	2,876
7	Wholesale and retail trade; repair of motor vehicles and motorcycles	2,566	4,919	5,436	10,355
8	Transportation and storage	71	366	136	502
9	Accommodation and food service activities	2,251	3,063	4,610	7,673
10	Information and communication	251	1,136	540	1,676
11	Financial and insurance activities	5	755	603	1,358
12	Professional, scientific and technical activities	9	45	13	58
13	Administrative and support service activities	886	969	493	1,462
14	Education	2,548	2,336	937	3,273
15	Human health and social work activities	76	161	152	313
16	Arts, entertainment and recreation	169	140	325	465
17	Other service activities	185	339	433	772
	Total	13,522	23,474	17,565	41,039

Source: BLMIS

4. Discussion, Conclusion and Recommendations:

Administrative datasets provide a more comprehensive and complete coverage at no additional burden to respondents. Data are usually available in a timely way and at comparably low cost. Yet, we have still not been able to reap the benefits of these valuable information for framing evidence-based policies and much dependence have been on the sample surveys and censuses. Even in the current context, when

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countries all around are hit by the COVID-19 pandemic, much reliance has been on administrative data because of the fact that survey data are not precise enough to provide details on individuals or households. Realizing the increasing role of administrative data in compiling official statistics, we need to shift from the technical survey-based approach to a simpler non-technical based approach using administrative data. As shown for the employment-unemployment indicators, the administrative data can be more precise and accurate in tracking the details of each individual. Due to its annual frequency, the LFS is not adequate to capture the frequent transitions between employment and unemployment spells. The BLMIS data can identify these spells with precision, making it a valuable tool for the study of frictional and youth unemployment. This enables planners and policy makers to formulate appropriate strategies to address the labour market challenges. On the analysis of the unemployment spells using both the administrative data and Labour Force Survey, Lafuente (2019) also claims that administrative data has the capability to analyse other unemployment measures such as short-term employment - unemployment spells and frictional unemployment which are normally unavailable in the Labour Force Surveys. The MoLHR has only recently embarked on the utilization of administrative data and much needs to be done in ensuring the proper flow and management of these data along with quality assurance frameworks. Although numerous administrative data are collected and maintained by different sectors, in the absence of a proper method for organization of these data, access to this information has become very difficult. Likewise, the main drawback of administrative datasets is the misalignment of the definitions of the indicators as compared to the survey indicators. Similarly, the cleaning and organizing of data requires considerable amount of time and knowledge of the specific indicators without the availability of metadata structures. The NSB being the custodian of official statistics in Bhutan can play an important role in strengthening the importance of managing and maintaining administrative data in the country through quality assurance mechanisms. Presently, the administrative data systems are managed independently by the respective government agencies without proper transfer and storage modules. The need for data integration and a central data repository to facilitate the use of administrative data through data-ecosystem networks has become a necessity.

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