Labour Supply Statistics: Challenges and Way Forward

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Abstract:
From the perspective of labour supply, Labour Force Survey (LFS) has been conducted in Malaysia since 1972 to cover selected regions in the country. Since 1982, the coverage has been extended to produce national annual estimates of labour force statistics. With economic and social developments and transitions nationally and globally, the frequency and disaggregation was further improved to quarterly and later monthly estimates at national and state levels. Ever since the inceptions of the LFS, concepts, definitions and classifications has been reviewed and adopted accordingly with the recommendations of the International Labour Organisation (ILO) and best practices of other National Statistical Offices. Considering the frequency of disseminations of LFS statistics, at times, the information has been overly utilised and has been the subject of misinterpretation when used as a replacement or proxies to other unavailable labour market the statistics of labour supply through household approach to cater and complement the other dimensions of labour market statistics.

Keywords:
Labour Force Survey; Labour statistics; Labour market information; Labour market dynamics

1. Introduction

Sound evidence-based policy making relies on comprehensive demographic, economic and social statistics. As much as the well-being of an economy is evaluated through the shift in the population structure and changes of the social landscape, labour plays an important part in understanding the world of work, such as the relationship between employment and growth, wage formation, the importance of human capital, migration and labour market regulations (ILO, 2013). Bean (2018), International Labour Organisation (ILO) (2017a) and KPMG Economics (2016) perceived labour statistics as the fundamental fragment of any labour market information system which is in turn very critical for research and policy formulation.

ILO (2017a) defined labour statistics as groups of official statistics relating to work, productive activities, workers, the characteristics of the labour market and the way it operates. These statistics comprised of a wide range of topics and link to many other bodies of official statistics, such as economic, education and health (ILO, 2017a). The dynamics of labour statistics encompassed both demand and supply (ILO, 2017a). Among the labour demand statistics are the number and characteristics of enterprises, jobs, vacancies as well as the costs of hiring. Statistics about labour supply deal with the size, structure and characteristics of working-age population, and more specifically, information on employment, unemployment, and persons outside the labour force (ILO, 2017a).

In terms of approach of data collection, these statistics are available from various sources ranging from surveys and censuses using household or establishment approach as well as administrative records. The production of these labour indicators adopted different methodologies, which adhered to the corresponding international standards (ILO, 2017a; ILO, 2017b). From the perspective of labour supply statistics, the usual source is household approach through the conduct of censuses and

surveys. Although not as popular as the other data sources, administrative record can provide information of labour supply as well.

In most countries, the statistics on labour supply are largely dependent upon the Labour Force Survey (LFS). Eurostat (2019) stated that LFS is a long-standing survey in Europe, going back to the 50s or 60s in some of the European countries. France was the first European country to carry out LFS in 1950, followed by Germany in 1957 (European Communities, 2003). The United Kingdom's first ever LFS was conducted in 1973 (Office of National Statistics (ONS) UK, 2017). In the United States of America (USA), Current Population Survey which is the equivalence of LFS is conducted by the U.S. Census Bureau to gauge labour supply since 1948 (U.S. Bureau of Labor Statistics and U.S. Census Bureau, 2016). Australian Bureau of Statistics (ABS) implemented the quarterly LFS for the country since November 1960 and later improved the frequency of data collection to every month beginning February 1978 (ABS, 2003). Closer to home, that is in the ASEAN regions, Singapore has reached its 41st edition of the LFS in 2018 (Ministry of Manpower, Singapore, 2019), while the undertaking of this survey in Thailand begun in 1963 (National Statistical Office Thailand, 2017).

In Malaysia, the LFS was conducted by the country's national statistical office, Department of Statistics, Malaysia (DOSM) since 1974 at irregular interval covering Peninsular Malaysia. The survey coverage was expanded to cover the whole country in 1982, and was conducted every year since then with exception for the year 1991 and 1994[1]. LFS also housed the supplements of other data collection modules i.e. Salaries & Wages Survey, Migration Survey and Survey of Manpower in the Informal Sector.

Considering the overarching role of the labour supply statistics within the national labour market information system in Malaysia, it is important that LFS as the primary source of these statistics is assessed objectively; and practical and realistic strategies is proposed to improve the production of labour supply statistics in the country.

2. The Labour Force Survey in Malaysia

The LFS in Malaysia remained as one of the key statistics in the labour market information framework. Initially conducted for the region of Peninsular Malaysia in 1974, the nationally representative survey took off in 1982. Due to the growing demands for regular and timely statistics, the survey frequency was increased to quarterly interval in 1998; and subsequently monthly survey took off since 2004.

Pen-and Paper Interviewing (PAPI) approach is employed for Malaysia's LFS in which trained enumerators visited households in selected living quarters (LQs) to collect demographic particulars of all household members and detailed labour force particulars of all members aged 15 years and over. A total of twenty-five per cent of the monthly allocated samples are repeated for the next quarter using Computer Assisted Telephone Interviewing (CATI).

The survey population is defined to cover persons who live in private LQs and hence excludes persons residing in institutional LQs such as hotels, hostels, hospitals, prisons, boarding houses, and construction work site. The sample for LFS is drawn from Malaysia Statistical Address Registry (MSAR) which is made up addresses of LQs, composed into Enumeration Blocks (EBs) of 80 to 120 LQs each. The core reference material used to define concepts, definitions and classifications are as proposed by the ILO through the conventions and recommendations; and guidelines.

The estimates for the specific characteristics in the survey population are acquired through inflating the sample by the combination of adjusted weight and external weight. The adjusted weight is used

[1] The absence of LFS for the two years was due to resources constraint as the organisation prioritized the implementation of Population and Housing Census in 1991 and the Agriculture Census in 1994.

to adjust for non-response in the survey, while the external weight i.e. the up-to-date population estimates is divided into specific characteristics of state, sex, age group, citizenship and ethnic group and compared to the sample of similar characteristics. On the basis of ratios of these distributions, correction factors or weights are derived which, when applied to the sample cases, make the sample distribution conform to the external benchmark. The combination of these weights is then applied to the LFS sample data to obtain estimates of labour force statistics (DOSM, 2019).

Since the LFS is designed to be representative at the geographical areas of states as well as urban and rural areas, disaggregation of the estimates by numerous socio-demographic and economic characteristics must be interpreted with cautions and subject to relative standard error. In the meantime, statistics that are not published as well as the micro data are provided upon request with considerations to the reliability of the related statistics. The disaggregation of LFS statistics which are usually made available to users by frequency of data collection are as in Table 2.1.

Table 2.1: Frequency and disaggregation of Malaysia's LFS indicator

Frequency	**Indicator**	**Disaggregation**
Annual	Labour force participation rate	Sex, Age, Ethnic group, Educational attainment, Highest certificate obtained, State, Urban/rural area
	Employment-to-population ration	Sex, Age group, Ethnic group, Urban/rural area
	Labour force	Sex, Age group, Ethnic group, Marital Status, Educational attainment, Highest certificate obtained, State, Urban/rural area
	Employed	Sex, Age group, Ethnic group, Marital status, Educational attainment, Highest certificate obtained, Industry, Occupation, Status in Employment, State, Urban/rural area, Mean and Median hours worked
	Unemployed	Sex, Age group, Ethnic group, Marital status, Educational attainment, Highest certificate obtained, Working Experience, Duration of unemployment, State, Urban/rural area
	Unemployment rate	Sex, Age group, Ethnic group, Educational attainment
	Outside labour force	Sex, Age group, Ethnic group, Educational attainment, Highest certificate obtained, State, Urban/rural area, Reasons for not seeking work
Quarterly	Labour force participation rate	Sex, Age group, Ethnic group, Educational attainment
	Labour force	Sex, Age group, Ethnic group, Educational attainment
	Employed	Sex, Age group, Ethnic group, Marital status, Educational attainment, Highest certificate obtained, Occupation, Status in Employment, State, Urban/rural area, Mean and Median hours worked
	Unemployed	Duration of unemployment
	Unemployment rate	Sex, Age group
	Outside labour force	Sex, Age group, Reasons for not seeking work
Monthly	Labour force participation rate	None
	Labour force	
	Employed	
	Unemployed	
	Unemployment rate	
	Outside labour force	

3. Assessment of Malaysia's LFS as the source of national labour supply statistics

Being one of the longest running national household surveys, the LFS is one of the most convenient sources in providing a rather long time series of the annual, quarterly and monthly principal labour force statistics. The annual statistics goes back as far as 1982, while the quarterly and monthly series begin in 1998 and 2004 respectively. Table 3.1 shows labour supply during selected years beginning 1982 leading up to the most recent year. It is observed that as the population grow, so does the employed person. However, there's a noticeable increased in the share of non-citizens that is 10.3 per cent of total populations in 2018 as opposed to 4.3 per cent of total populations in 1992. Table 3.2 shows the share of Gross Domestic Products (GDP) by sector during similar period, wherever available. It is observed that the share of GDP in agriculture sector reduced considerably while the services sector dominated with majority share since 2012.

Table 3.1: Population estimates and principal labour force statistics, Malaysia, selected years

Year	Unit	1982	1992	2002	2012	2018
Population	('000)	14,651.1	19,067.5	24,542.5	29,510.0	32,382.3
Citizens	('000)	14,651.1	18,205.1	22,942.1	26,961.7	29,059.6
Non-citizens	('000)	n.a.	862.4	1,600.4	2,548.3	3,322.7
Labour force	('000)	5,431.4	7,319.0	9,886.2	13,221.7	15,280.3
Employed	('000)	5,249.0	7,047.8	9,542.6	12,820.5	14,776.0
Unemployed	('000)	401.9	515.0	516.7	589.3	437.5
Employed less than 30 hours	('000)	182.4	271.2	343.5	401.2	504.3
Outside labour force	('000)	2,944.6	3,783.6	5,473.8	6,927.4	7,094.4
Labour force participation rate	(%)	64.8	65.9	64.4	65.6	68.3
Unemployment rate	(%)	3.4	3.7	3.5	3.0	3.3

Note: n.a. Breakdown for citizenship is not available
Source: Current Population Estimates, Malaysia, 2018-2019; Labour Force Survey, Various Years, DOSM

Table 3.2: Share of GDP by kind of economic activity at constant price, Malaysia, selected years

(%)

Year	1992	2002	2012	2018p
Price	(1987=100)	(2000=100)	(2010=100)	(2015=100)
Kind of economic activity				
Agriculture	14.6	8.3	9.8	7.3
Mining and Quarrying	8.6	10.2	9.5	7.6
Manufacturing	25.1	29.0	23.2	22.4
Construction	3.8	3.9	3.8	4.9
Services	38.8	42.2	52.5	56.7
Less: Undistributed FISIM	5.0	4.5	-	-
Plus: Import Duties	4.0	1.7	1.1	1.2
GDP at Purchasers' Prices	100.0	100.0	100.0	100.0

Note: Starting 2005, FISIM has been distributed to all activities
Source: National Accounts, Various Years, DOSM

Within the view of the policy makers and regulators, this lengthy time series is very convenient for monitoring purposes, looking at historical points to identify trends, cycles and structures and ultimately formulate the suitable strategies and initiatives. This features also appeal to the academia in conduction labour market and human capital development studies.

Beyond the compulsory questions to identify labour force status of the population, Malaysia's LFS which canvassed all members in the selected households is one of the few national surveys that asks detailed demographic characteristics of the population. Examples of the questions are marital status, educational attainment, highest certificate obtained and field of studies. This is a cost-effective

method to ensure regular updates as a substitute to the population and housing census. This features also make it the most commonly used survey to ride additional modules and supplementary questionnaire regularly or on ad hoc basis. This corroborates with the findings of ILO (2017a) and European Communities (2003) that LFS offers a consistent framework to study employment, unemployment and persons outside the labour force concurrently, with rich and extensive dimensions for disaggregation, as well as provides venue to study parts of informality through the informal sector employment. In line with the European Communities (2003) observation, the Malaysia's LFS also to some extend facilitates the opportunity to obtain labour supply information across all sectors of the economy in a consistent manner.

LFS in Malaysia can be considered as one of the more matured and established data collection activity in the national statistical system. Sound methodology is in place since it adheres to ILO's international standards in terms of compilation and dissemination. This allows for international validity, consistency, accuracy, reliability, timeliness and comparability. To date, the statistics derived from Malaysia's LFS is consistently used to update the ILOSTATS statistical database[2].

As LFS presents numerous advantages, it is common to witnessed its usage across various research and studies. The use of LFS to mobilize efforts on human capital development is most apparent in the medium term strategies documents, i.e. five-year Malaysia Plans, the most recent being Mid-Term Review of the Eleventh Malaysia Plan. Additionally, short term policies documents that utilised the LFS especially within the scope of human capital development are Bank Negara Malaysia (BNM) Annual Report and Ministry of Finance (MOF) Economic Outlook. The statistics of the LFS is also the main features in the studies on labour market position employed by independent and government-backed research agencies such as Khazanah Research Institute. At the international forefront, labour market studies by the World Bank and Organisation for Economic Co-operation and Development (OECD), among others, mostly depend on the LFS as the major data sources.

In spite of its many plus points, the LFS is not without faults and limitations. As far as reliability and quality of the estimates goes, LFS being a household survey is subjected to sampling errors and non-sampling errors. The sampling errors occurrence is especially true when the estimates are disaggregated for small groups or areas which are under-represented in the sample (DOSM, 2019; ILO, 2017a). Although the sampling error can be reduced by increasing the number of observations sampled, it is not the most financially smart solution in the long run. The non-sampling error in LFS might prevail due to misleading comprehension of definitions and concepts either by enumerators or respondents; or defective methods of data collection. Unlike the sampling error, this error may rise with the increase in sample size. Banda (2003) emphasised that this type of error can be more detrimental for large-scale household surveys in the absence of proper control mechanism.

Another issue to consider is the use of proxy respondents i.e. one household member providing the required information on all the members of his or her household. Since 75 per cent of the sampled households in the national LFS currently uses PAPI where enumerators visited households to obtained information, more often than not, households are not fully occupied due to members being at work, school or other places. According to the ILO (2017a), this may also hamper the precision of the response.

Due to its reputation as the most cost-effective and frequent data collection activity, the LFS is often ridden on for testing new data collection instrument in addition to the regular supplements of Migration Survey and Salaries & Wages Survey. At times, these added loads might compromise the quality of responses for labour-related fields in the questionnaire. Furthermore, this also may add to respondents' burden and eventually cause the response rate to decline.

[2] The ILOSTATS is a website maintained by the ILO Department of Statistics which offers access to data tables for key indicators, statistical briefs, concepts and methods.

Considering the sample design which does not take into account economic activity and occupation of household members, certain information is obtained indirectly and is perceived as the by-product of the LFS. The obvious instances would be estimates of employment across economic sectors or occupation categories. Although both might produce statistically reliable estimates at major groups, disaggregation at detail subsectors or occupations may not be able to offer nationally representative estimates. This is also customary for other variables in the LFS such as educational attainment, highest certificate obtained and field of studies. The sampling base on which such estimates would depend would be too small, and the degree of variability correspondingly high (European Communities, 2003).

Being a regular survey with multiple demographic and socioeconomic variables, LFS is sometimes the subject of misused. The short term difference in the number of employed persons i.e. the employment change is often interpreted as jobs created and denotes as labour demand statistics. Since LFS adopts household approach, the interpretation might provide the wrong signal to the market and the overall economy. Similarly, when used to measure graduate employability, the LFS might not offer the most accurate results since it is not designed to cater for potential labour supply or track graduates across the labour market.

4. Way forward for the labour supply statistics in Malaysia

LFS definitely has a special position as the source of labour supply in the spectrum of labour market information. Nevertheless, as we move ahead within the realm of demographic transition towards ageing population and urbanised households on one hand, and the rapid technological change and revolutionised world of work and economic landscape on another, there is a pressing need to alter and improve the current method for production of labour supply statistics.

Firstly, it is important to extend the coverage of the LFS' sample to take into account all population including those living in institutional LQs. Semi-skilled employed persons within selected subsectors, especially non-citizens in the agriculture and construction sectors often reside in communal houses. Thus, this recommendation is to ensure a more comprehensive coverage, and essentially increase the accuracy of the labour supply estimates in the market.

The later generation of respondents are technology savvy, value privacy and non-intrusive. As far as the mode of data collection for LFS is concern, it is timely that we transform towards a more respondent friendly self-completion mode through drop-off and pick-up of questionnaire and e-survey. In keeping with this modernization, the content of the questionnaire should be reviewed and simplify where necessary to cater for the primary objective of the LFS which is to determine the labour force status of the population as either employed, unemployed, underemployed and outside labour force.

Further than taking up surveys, it is high time that the national statistical system ventures into a more strategic source i.e. administrative records. As indicated by ILO (2017a), the nature of administrative records which is created and maintained by the corresponding agency is an economical source with real-time information and exhaustive coverage. UK leveraged the administrative record of unemployment insurance since 1920s to complement surveys and censuses data (Bean, 2018). MOM, Singapore and BLS, USA also incorporate information from various sources to produce comprehensive monthly updates on labour market situation. In this respect, Malaysia's Employment Insurance System (EIS) which took off contributions from employees since January 2018 and offers insurance to retrenched employees since January 2019 is one very potential source of labour supply information. Besides providing immediate financial benefits and upskilling opportunities to workers who have lost their jobs, the other objectives of EIS also includes to provide up-to-date and comprehensive labour market information to policymakers (PERKESO, 2019).

As the economic structure diversifies and the technology changes rapidly, the world of work is becoming more and more dynamic. As such, no one particular source should be over-utilised to form

a comprehensive labour market information and analysis framework. Malaysia is geared towards improving the labour market statistics in keeping up with these changes so as to provide labour statistics that can be linked to the economy and social backdrop.

References:

Australian Bureau of Statistics. (2003, April 14). *Labour Force*. Retrieved from Australian Bureau of Statistics (ABS): https://www.abs.gov.au/AUSSTATS/abs@.nsf/DOSSbyTopic/139689E1A84FE4F0CA256BD00028B0E5?OpenDocument

Banda, J. P. (2003, December). Nonsampling errors in surveys. *In Expert Group Meeting to Review the Draft Handbook on Designing of Household Sample Surveys, United Nations Secretariat, New York*. (pp. 3-5).

Bean, R. (2018). *International labour statistics: A handbook, guide, and recent trends (Vol. 3).* Routledge.

Department of Statistics, Malaysia. (2019). *Labour Force Survey, Malaysia, 2018.* Putrajaya: Department of Statistics, Malaysia.

European Communities. (2003). *The European Union labour force Survey* . Luxembourg: Office for Official Publications of the European Communities.

Eurostat. (2019, April 17). *eurostat Statistics Explained*. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey_%E2%80%93_development_and_history#Development_of_the_EU-LFS

International Labour Organization. (2013). Edited by Cazes, S., & Verick, S. *Perspectives on labour economics for development.* Geneva: ILO.

International Labour Organization. (2017a). Quick Guide on Sources and Uses of Labour Statistics. Geneva, Switzerland. Retrieved from www.ilo.org/publns

International Labour Organization. (2017b). *Visualizing Labour Market: A Quick Guide to Charting Labour Statistics.* Geneva: ILO.

KPMG Economics. (2016, February). *KPMG Research Paper: The Role of Capital and Labour in Driving Economic Growth in Australia.* KPMG.

Ministry of Manpower, Singapore. (2019). *Labour Force in Singapore, 2018.* Singapore: MOM, Singapore.

Office for National Statistics, UK. (2017). *User Guide (Vol.1): LFS Background and Methodology 2016.* ONS, UK.

Pertubuhan Keselamatan Sosial (PERKESO). (2019, July 29). *Employment Insurance System*. Retrieved from Social Security Organization : https://www.perkeso.gov.my/index.php/en/mengenai-sip/our-objective

U.S. Bureau of Labor Statistics and U.S. Census Bureau. (2016). History of the Current Population Survey. In *Current Population Survey Design and Methodology Technical Paper 66* (pp. 2-1 -2-7). U.S. Bureau of Labor Statistics and U.S. Census Bureau.