**Improving Labour Market Statistical Literacy for Organisations and Individual Users**

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**Abstract**

*Karl Pearson once said “Statistics is the grammer of science”. Statistics is important and useful when utilised properly. As the National Statistical Agency for manpower statistics, the Manpower Research and Statistics Department (MRSD) of Singapore’s Ministry of Manpower collects, analyses and disseminates essential statistical information on Singapore’s labour market. Helping people understand and utilise manpower statistics is just as important as our primary statistical activities. To improve labour market statistical literacy, we have different approaches to reach out to the relevant stakeholders.*

*This paper highlights the steps we adopt to improve labour market statistical literacy and reduce statistical misconceptions among relevant stakeholders, whom can be categorised into organisations (i.e. educational institutions, private corporations, the media outlets and the public sector) and individual users.*

*To assess the level of labour market statistical literacy among the relevant stakeholders, we conduct informal polls to gauge users’ awareness of the latest manpower statistical information and the concepts behind them. Our approach to improve manpower statistical literacy and reduce statistical misconceptions is tailored for each stakeholder. Our outreach efforts include liaising with various organisations to bring statistical information to them. An example would be MRSD’s collaborations with tertiary institutions. We conduct sessions with students at educational institutions to raise their awareness of the labour market situation and show them how such information could be used for their job search. For individual users, we publish regular papers and infographics that inform users of the latest labour market happenings and explain confusing concepts such as the concept of unemployment.*

**Keywords:** labour market, manpower, statistical literacy

**1. Introduction**

As the National Statistical Agency for manpower statistics, the Manpower Research and Statistics Department (MRSD) of Singapore’s Ministry of Manpower collects, analyses and disseminates essential statistical information on Singapore’s labour market. MRSD serves diverse user communities by providing information that is objective, timely, accurate and relevant.

With the widespread use of social media in the modern society, information is often easily re-generated and misinterpreted. While statistics is all around us, it is only useful when utilised or conveyed properly (Gal, 2002). Ensuring proper usage and understanding of manpower statistics via statistical literacy is just as important as our primary statistical activities.

This paper highlights the current approach taken to improve labour market statistical literacy and reduce statistical misconceptions or misinterpretations among relevant stakeholders, mainly organisations and individual users. It also highlights future steps that MRSD would take.

**2. Current approach and stakeholders**

MRSD’s current approach to improve labour market statistical literacy and reduce statistical misconceptions is tailored for each stakeholder, whom can be categorised into organisations and individual users, as illustrated in Figure 1.

**Figure 1. MRSD’s key stakeholders**

 

Source: Manpower Research & Statistics Department, Ministry of Manpower, Singapore

*2.1. Organisations*

MRSD’s outreach effects involve liaising with various organisations to bring statistical information to them.

*2.1.1. Educational institutions*

In 2017, MRSD started an initiative to collaborate with educational institutions such as polytechnics and universities. Through engagement with students and career counsellors, their needs and common misconceptions about labour market statistics were highlighted. To raise awareness of the labour market situation, interactive sessions were organised. In addition, MRSD showed students how such readily-available information about the labour market could be used for their job search.

The labour market sessions covered essential labour market information such as:

1. The current labour market situation in Singapore
2. Areas of growth in the economy – Where are the jobs?
3. Skills employers look out for
4. Up and coming jobs
5. Starting pay and expectations of job search
6. Employment conditions

Common labour market concepts such as *labour force status*, *unemployment*, *retrenchment* and *job vacancy to unemployed persons ratio* were also introduced and explained using actual data and trends. Understanding the labour market concepts would allow students to understand and “read” the data, allowing them to utilise the data for various purposes such as job search or a research project.

Throughout the sessions, responses in polls convey students’ understanding, allowing for on-the-spot elaboration about the topic discussed. Questions and discussions are also encouraged, leading to two-way communication and mutual understanding.

*2.1.2. Media, researchers, public sector and private organisations*

Statistical literacy sessions “Stats 101” are also organised for the media (users such as journalists, editors) and researchers. These sessions discuss the importance of labour market statistics, structure of the labour market, key labour market statistics and also common misconceptions.

Despite being regular users of labour market statistics, there are many different forms of labour market indicators and being able to link them together to tell a story accurately is a challenge. Such sessions are also organised for the public sector and private corporations. These sessions also discuss MRSD’s statistical production process, as well as the different sources of data (surveys and administrative data).

Such strategic partnerships ensure the impact of statistical collaborations are maximised, allowing for long-term and widespread outcomes for MRSD, as well as our stakeholders.

*2.2. Individuals*

MRSD’s regular releases update individual users about the latest labour market happenings and revised concepts and definitions. Aside from our ad-hoc releases, MRSD publishes around 13 regular papers annually on our statistical website[[1]](#footnote-1), accompanied by detailed tables, charts, videographics and infographics. A wide range of official statistical indicators on Singapore’s labour market is covered, including *unemployment*, *employment*, *retrenchment*, *income*, *hours worked*, *job vacancy* and *labour turnover*. On an ad-hoc basis, technical papers and feature articles are also published, to update users on revised indicators and new areas of study.

On MRSD’s statistical website, “Understanding statistics” exists as a self-help for users who wish to understand the various labour market indicators. The following detailed information is available for each indicator:

* Concepts and definitions
* Source and coverage
* Uses and limitations
* Frequently asked questions (FAQs)

This section caters to basic users who want to understand the concept, as well as advanced and regular users who want to compare sources and coverage of data available. A series of labour market statistics literacy animations help users understand the different statistical concepts. Upon completing each section, users are able to test their understanding via a short interactive quiz. This strengthens the users’ understanding of the concepts and definitions. An excerpt is shown in Figure 2.

Information on basic statistical concepts such as mean, median, percentiles and seasonal adjustment are also made available for users unfamiliar with statistical concepts.

**Figure 2. An interactive quiz on unemployment**



Source: Manpower Research & Statistics Department, Ministry of Manpower, Singapore

**3. Labour market statistical literacy survey**

A 2002 international survey of statistical literacy conducted by the W. M. Keck Statistical Literacy Project surveyed college teachers, professional data analysts, college students and school mathematical teachers on their ability to describe and compare data (Schield, 2011). Yotongyos, Traiwichitkhun and Kaemkate (2015) have also utilised surveys to measure statistical literacy among undergraduate students. As statistical literacy is a latent variable which cannot be directly measured or drawn from administrative sources, conducting surveys to measure statistical literacy has proven to be successful. Nonetheless, the exact questions asked would differ, depending on the researchers’ objective.

In implementing MRSD’s pilot labour market statistical literacy survey, MRSD had two objectives:

* To gauge users’ awareness of the latest labour market situation in terms of latest available data
* Understanding users’ knowledge of labour market statistical concepts and definitions

In February 2018, MRSD conducted a preliminary poll on university students to understand their labour market statistical literacy and knowledge. The survey was conducted across 3 sessions and covered 178 university students. The focus of the survey was students’ ability to identify latest labour market data and the underlying labour market concepts. The five questions asked in the survey were based on labour market concepts or data-driven. Questions were independent of each other and based on Singapore’s labour market.

Table 1 illustrates the responses received. Questions on labour market concepts tended to be correctly answered (60%~79%), as compared to data-related questions on the latest labour market situation (9%~60%). Students’ labour market concepts were stronger, a result of basic economic concepts learnt at school. The low awareness of current labour market information suggested that MRSD’s current outreach efforts discussed in the earlier section may not be sufficient. As MRSD’s labour market sessions were a new initiative that began in 2017, there is certainly room for more outreach efforts.

**Table 1. Labour market statistical literacy survey questions – distribution of responses (%)**

|  |  |  |  |
| --- | --- | --- | --- |
| Type | Question | Answer | % |
| Concept | Who is considered unemployed? | A student currently studying & looking for a part-time job |  4.2 |
| **A person who has no job but is willing & available for work** | **78.9** |
| A person who is working but actively looking for another job | 4.2  |
| All of the above |  12.7 |
| If a person is working part-time, is he/she considered employed or unemployed? | **Employed** | **59.6** |
| Unemployed | 32.0  |
| Not sure |  8.4 |
| Data | What is the resident unemployment rate in December 2017? | 1.9% |  18.5 |
| **2.9%** | **34.8** |
| 3.9% |  26.4 |
| 4.9% |  20.2 |
| What is the employment change (excluding foreign domestic workers) in 2017? | **-10,700** | **9.3** |
| 5,700 |  35.5 |
| 15,700 |  45.3 |
| 20,700 |  9.9 |
| Which industry employs the most people? | Manufacturing (e.g. electronics) |  30.9 |
| Construction |  9.1 |
| **Services (e.g. professional services)** | **60.0** |

Source: Manpower Research & Statistics Department, Ministry of Manpower (Singapore)

Notes:

1. Correct answers are in bold.
2. Data exclude non-responses and may not add up to 100% due to rounding.

**4. Future steps**

Polling users on their labour market statistical literacy and knowledge is a new initiative by MRSD and the findings are certainly useful. In addition to polling more students, MRSD plans to survey different users (e.g. the general public, staff of educational institutions and regular users of labour market data) on labour market statistical literacy and knowledge. Understanding the proficiency of each stakeholder will allow us to further refine and improve our approach.

**5. Conclusion**

Statistics is important and useful when utilised properly. The key to proper usage of manpower statistics is labour market statistical literacy. As such, it is an area that MRSD is placing increasing focus on. Along with our on-going efforts to improve labour market statistical literacy and reduce misconceptions, we aim to engage stakeholders more often, to find out about the current struggles when using manpower statistics. Further customising our current approaches will ensure good understanding and appropriate use of manpower statistics, allowing for better and efficient communication with our users (United Nations, 2012).

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1. <http://stats.mom.gov.sg> [↑](#footnote-ref-1)