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Topic (i): How IT can contribute to changing organizational culture

The Implementation of e-Survey in the Department of Statistics Malaysia

Prepared by Habsah Salleh, Department of Statistics, Malaysia

I. Introduction

1. Data collection method has evolved tremendously since the era of information technology. Malaysia is not excepted from having the pressure as the phase change over time. Face to face interview has been seen as a conventional way of getting data from the respondents. Collection of data via internet has been very important these days. Internet provides an efficient channel for fast, efficient and reliable data collection, whereby researchers and respondents are connected virtually.

2. In the conventional method of data collection, longer time is required by a field enumerator to gain information from the establishment, as well as higher transportation cost incurred. The main concerns in handling data are the confidentiality of the information given and its integrity. Data is exposed to the risk of information leak even with the strictest supervision.

3. E-survey is an electronic web-based survey instrument where the questionnaire is in the server network and connected to other organisation via internet (Green,1995; Stanton,1998). This medium of data collection is a safe and secured e-service platform that allows user to submit business survey via the internet. It provides a safe and convenient way to submit the survey returns and check for submission status.

II. Background

4. Realizing the importance of data in policy and decision making, countries in the region have moved to modernising their statistical system. GSBPM, GSIM, electronic collection data and usage of administrative data are widely applied.

5. As part of the modernization program, the Department of Statistics Malaysia has started using this electronic medium for data collection for some of the surveys some years back. Computer-assisted personal interview (CAPI) has been used to collect monthly prices, computer-assisted telephone interview (CATI) for the labour force survey; e-mail and e-survey for economic surveys are some of the examples of electronic data collection method implemented.

6. This effort has also contributed in improving the public service delivery system as the governmental efforts made during the past decades. It has produced favourable impacts in improving the governance and the quality of services in the public sector. Under the Government Transformation Program and Economic Transformation Program, all projects are monitored closely has resulted in the supply of data being more frequent. The need to have early indicator in the national economy is the signal for the DOSM to produce earlier data.

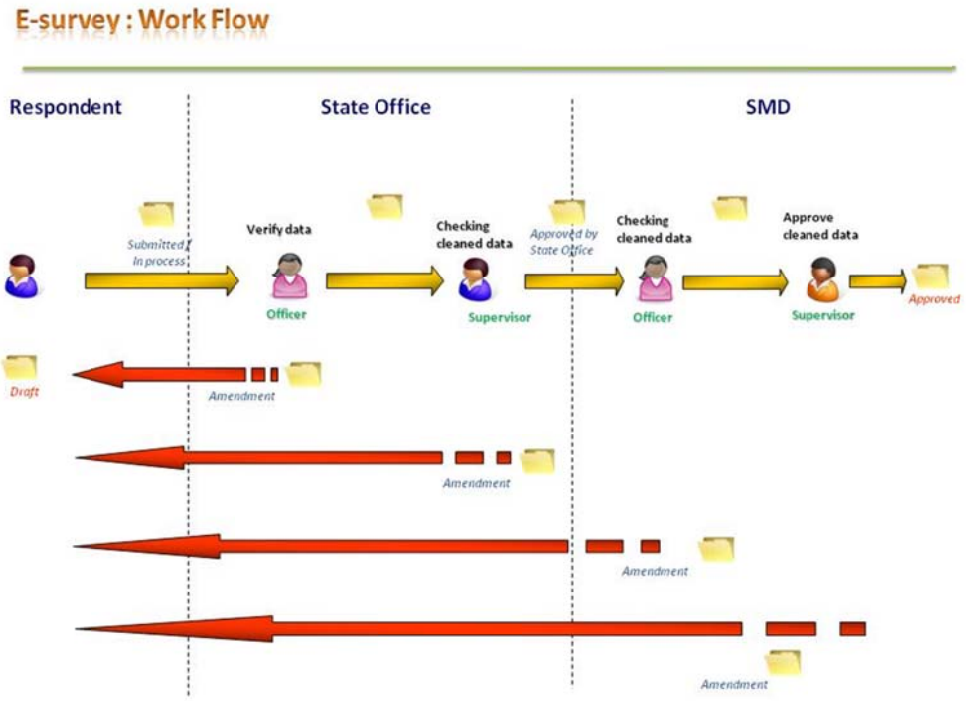
7. E-survey in DOSM was first introduced in 2008 for the International Trade-In Services Survey. The application of the method was then extended to the Monthly Manufacturing Survey in 2009 and Quarterly Services Survey (2012).

8. Subsequently, DOSM has taken further initiatives by launching the National Enterprise Web Statistical System (NEWSS) project in 2008. It is developed mainly to integrate, incorporate field activities, sampling, data collection, processing, analysis, estimation and including on demand report generation anywhere and anytime. This platform also includes the implementation of e-survey with the Monthly Manufacturing Survey selected for its stability and norm to the department.

9. The implementation of e-survey is to fulfil the department's expectation to have a better management on data collection operation.

- By using the e-survey method, channelling of information from data provider to the database become more efficient.
- Time taken to produce data can be shortened as some stages in data processing are done within the system.
- Reduction in operation cost: less paper printed, courier cost and reduce number of visit to the respondents.
- Improve respondents' confidence level as the data will be sent directly to the subject matter division without having to query to field enumerator or data entry which may cause non sampling error.

10. Process flow of e-survey is shown in the diagram:



11. Questionnaires will be sent to the State Offices upon completion by the respondents. Data will be verified by the state personnel as the first stage of quality checking. Once the data is verified then it will go through confirmation by the supervisor at state level and then submitted to subject matter division (SMD) for final checking. Should the data need to be reconfirmed, then the notification will automatically be sent to the respective respondents. If the data is valid, then it will go through the quality check process by the SMD. All processes are linked to the NEWSS. Within the NEWSS, all level of activities by those involved will be notified.

III. Implementation

12. Surveys selected to use e-survey are based on the criteria that the questionnaire is short and frequency of the data collection is more often such as monthly and quarterly. This is to avoid the respondents' fatigue.

13. For first time respondent to e-survey, as a preparation before the survey, the field enumerator (FE) will have to make a visit to the respective establishment to introduce the e-survey method. The FE will then guide them on how to fill in the form via e-survey. Some respondents may not want any supervision as they can fill in the form by themselves. In order to get the first appointment, the state office may sometimes have to do multiple contacts.

14. Attempts have to be made from time to time. Some establishment will only agree to participate and respond via e-survey after some months experiencing filling in the form manually. Initially, some respondent may have given the company's information via face to face interview with the FE but then realised that e-survey would be a better way.

15. Training guide to respondents on the usage of e-survey system is normally held at their premises but some are also invited to the office where DOSM organise training session. Identification number will be provided to the respondents who are committed to respond via e-survey.

16. Good relationship and communication with the respondent is a very important factor which contributes to the success of e-survey. Engagement programs are organised on regular basis. Economic establishments are invited to participate in the dialogue session with the DOSM. The inputs for the session vary from informing the establishment on the importance of their data to sharing of latest statistics on respective topics and issues.

IV. Results

17. DOSM first launched the e-survey in April 2008 for the International Trade–in Services Survey for the transportation subsector. The data collected is an input for the compilation on the national balance of payment. The usage was then extended to telecommunication, computer and information subsectors. With a sample size about 300 establishments, 30 percent responded via e-survey. With the success and expectation achieved in the implementation of e-survey, the duration for data compilation is shortened from 10 weeks to 7 weeks.

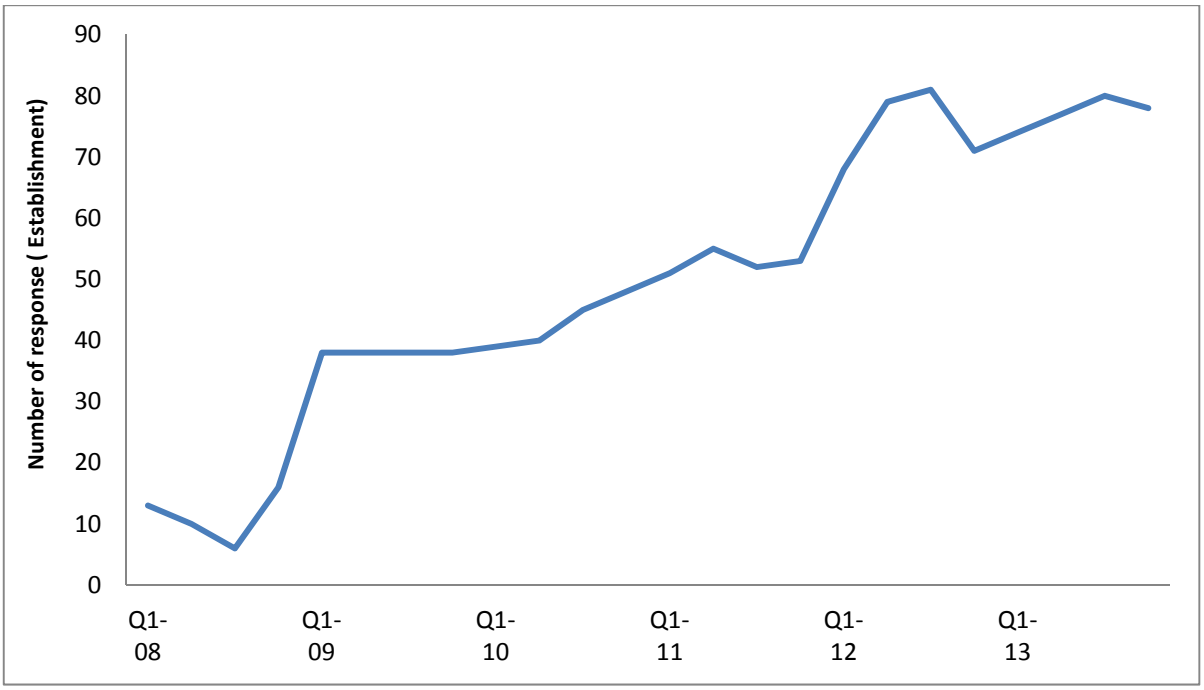


Chart 1: Number of response for International Trade-in Services Survey

18. In April 2009, the e-survey for Monthly Manufacturing Survey (MMS) was launched. Variables collected from this survey are key statistics in the manufacturing sector such as sales, number of workers, wages and salary, and production quantity.

19. The MMS collection technique prior to the e-survey was mail survey. About 4500 establishments are covered for each month from selected manufacturing industries. Questionnaires and manual were printed and mailed to the selected establishment before the first month of the reference month. A total of 12 sets of questionnaires were sent and the respondents are expected to return one set each month.

20. Based on previous experience, only 20 percent of the respondents completed and returned the questionnaires to DOSM. Follow up visits were needed to optimise the response. In the first two years after the implementation of e-survey, the response rate was very low. This was due to the fact that the field

enumerators were inexperienced in handling the new system. The response started to pick up only when concerted efforts were taken to rectify and improve the situation.

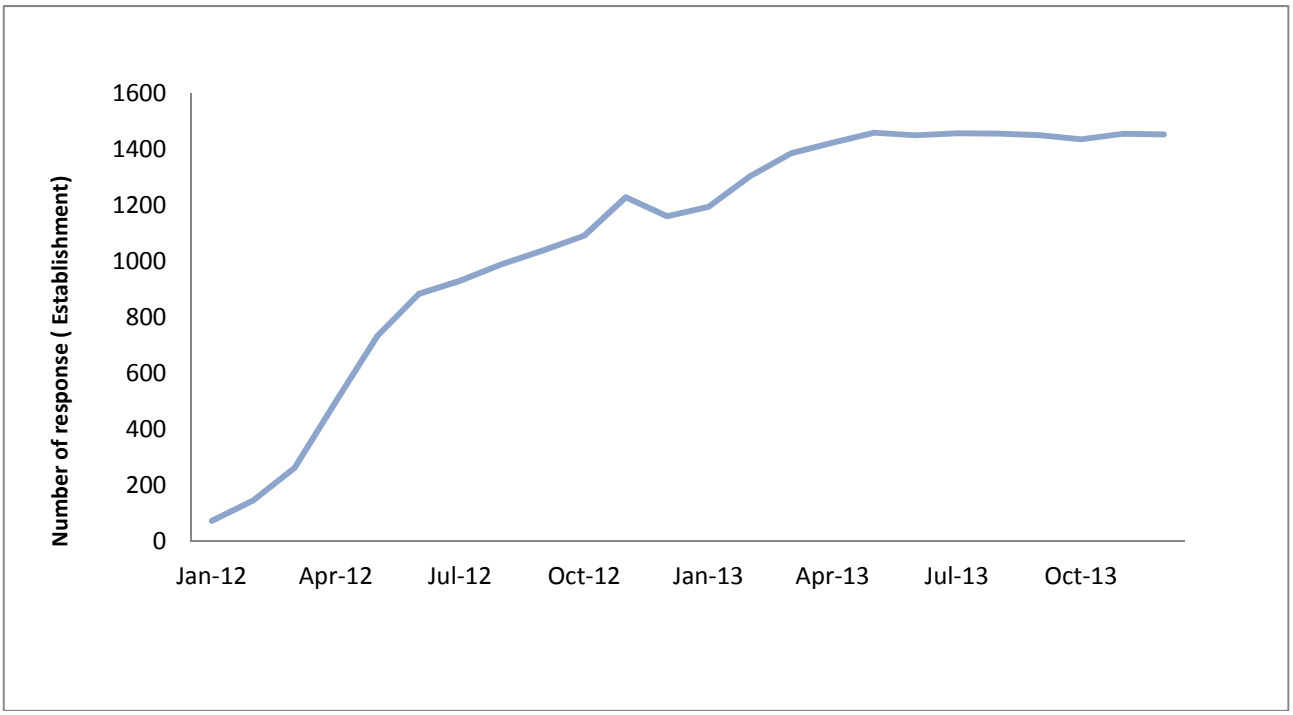


Chart 2: Number of response for Monthly Manufacturing Survey

V. Implication to the organization

A. Accelerate the preparation of data

21. The need for data is increasing from day to day by stakeholder and the public. E-survey method can speed up data preparation process, for example, MMS data processing is shortened from 7 to 6 weeks. Although the overall reduction in time is not significant, merely the processes such as data entry and verification were greatly shortened. We are looking forward to have the data processing even shorter in the near future.

22. Time saving occurs during the early stage of data collection where no hardcopy questionnaire is needed to be delivered to the respondents. Respondents are contactable directly via telephone or e-mail. Data picked up from the respondents would normally reach office very quickly. Auto notification to respondents will be issued just a couple of days before dateline.

B. Cost saving

23. Costs incurred in the mail survey are for courier services, printing of questionnaires, envelop and follow up visits to the establishment. 30 percents responses in e-survey indicate that 30 percent saving in transportation cost for follow up visit. In data collection only saving to cost revisit (follow up) has been economized totalled 30 per cent. The amount of labour can also be reduced.

C. Human Resource

24. The use of e-survey exposes to DOSM staffs as well as public that data collection can be performed through various ways. The conventional way takes longer time and higher cost whilst electronic and web-based are more economical yet practical. Working culture needs to be accustomed and suited with the existing technology facility where electronic data collection is the best medium.

25. The e-survey encourages a more systematic work culture. Work process that needs to be carried out was developed in the system where staffs have to follow accordingly. Since progress in monitoring is done electronically, field enumerator's work load is reduced. The morale of staff will likewise improve.

D. Data Quality

26. The data collected via e-survey is seen to have better quality as compared to conventional method. Non-sampling errors may occur if the interview period takes a long time, hence information given may not be accurate in order to speed up the session. Respondents using e-survey unhesitatingly cooperate resulting in fixed-term accurate feedback. This will minimise the interview bias. Data entry error is eliminated as the response in the form of data received directly. Data quality can be enhanced to ensure data integrity and reliability.

E. Security

27. Only registered user will be given facility to access the e-survey system to ensure the confidentiality of data. Respondents have rather flexibility to give feedback according to their time suitable. Data shall not be disclosed or accessed without authorization

VI. Limitation

28. The limitation can be serious, depending on the targeted population and the goal of the research project, because they involve time-consuming development, limited access to potential users (only those with internet access), potential technological problems, and the possibility of poor security threatening the validity of the study. Both parties, DOSM and respondents, must be ready to be equipped with e-survey infrastructures; and the willingness to participate in the survey.

VII. Way forward

29. The department is promoting the usage of web-based method in channelling data to its respondents. Various strategies have been introduced to increase participation (Jamaliah, 2012). Among others are:

- Organising session with respondents to inform them on the usage of e-survey and hands-on.
- Sending pamphlets and brochures on e-survey to establishments with e-mail address.
- Determine target responds
- Assist respondents in registration as portal user
- Sharing of findings on industries related to respondents.

30. DOSM is continuously finding ways to increase the usage of e-survey to replace the conventional method. Apart from increasing the number of establishment surveys, plans are being made to apply e-survey in household surveys.

31. DOSM needs to develop a group of technical expertise in the design of questionnaires which are user friendly in term of the sequencing of questions, system features and stable network (interruption reduces respondents interest to respond).

VIII. Conclusion

32. The department has benefited a lot from the usage of this electronic means for data collection. Although the achievement in term of response rate is around 30 percent of the total, it has shown a significant change in the culture of data collection in the organization.

33. As at end of 2012, the household internet penetration rate in Malaysia is 66.0 percent, it is with high hope that the next Population Census will capture at least half of response through e-survey.

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