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Theme 3

EFFORTS MADE TO PROMOTE TIMELINESS AND ACCURACY OF STATISTICAL DATA: THE CASE OF KOREA

Supporting paper submitted by Korea National Statistical Office[1]

I. Introduction

1. Korea National Statistical Office (KNSO) has directed its efforts to securing more timely and accurate statistics and indeed has seen some progress made in that regard. Given the achievement so far made, some people might easily assume that the timeliness and accuracy of statistical data can be improved much further. However, this optimistic prediction soon turns out to be unrealistic. The recent ever-growing awareness towards information security and privacy is one of the typical elements that make statistical surveys a difficult job. Moreover, it is not easy at all to work out innovations or new methods to render statistics more relevant and precise.

2. Under these circumstances, any attempt to weigh only one of the two factors, that is, timeliness or accuracy, would undermine the other, as the two are in a trade-off relation. In this view, it is a very challenging but a crucial task to strike a balance between timeliness and accuracy and promote the two at the same time.

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3. This paper is intended to describe the efforts so far made by KNSO to ensure that statistics, especially concerning the mining and manufacturing survey and unemployment rates, are timely and accurate, and the progress achieved in the process. It also briefly mentions the future plan of the Office to raise timeliness and accuracy of statistical data and information simultaneously.

II. Progress made in relation to more timely and accurate statistics

1. Timeliness

4. KNSO conducts an annual statistical survey covering the establishments with 5 workers or more in the mining and manufacturing sector. In addition, in the years with the ending digit of '3' or '8' (e.g., the year 1998), the Office carries out the Industrial Census covering all the establishments in the sector. For these surveys, all the statistical organizations of local governments are utilized and eup, myon and dong (the lowest level of administrative units) office staff and temporary enumerators visit each and every establishment to conduct an interview with them.

< Table 1 > Structure of the Mining & Manufacturing Survey

Center	City, Province	*shi, gun, gu*	*Eup, myon, dong*	Individual establishments

5. Until 1995, all that local governments did for the mining and manufacturing survey was to fill out the given survey questionnaires, and KNSO performed all the remaining jobs: data entry, editing, analysis, etc. The time consumed for the surveys broke down to 1 month for filling out forms (April 1-30); 5 months for data entry and preliminary editing (April 30-September 31); approximately 2 months for complex editing (preliminary results were announced on December 22); and about 4 months for checking and updating details. The final results were released on April 26 of the following year.

6. Meanwhile, in late 1994, KNSO began reviewing the possibility of shortening the time taken for the survey and promoting data accuracy. As a consequence, the Office decided to decentralize part of survey-related workloads to local governments, which would help increase the accuracy and efficiency of surveys. Accordingly, data entry, editing and 1st complex editing have been transferred to local governments (shi, gun and gu). The availability of PCs in all the local government offices and the resultant improvement in their ability to process data have facilitated the transfer of survey workloads.

7. Despite the decentralized survey process, however, KNSO developed the computer software program for data entry, editing and 1st complex editing and disseminated it among local governments, in an effort to minimize problems that might arise from changes in the survey process. At the same time, the Office provided on-site guidance and technical assistance on utilizing the software. In 1995, the revised survey process was first applied to two of 15 cities or provinces, and the workload taken over by the two local governments accounted for 17.3 percent

(16,006 out of the 92,578 establishments surveyed). The proportion increased to 37.8 percent in 1996, when the new process was applied to five cities or provinces, and further grew to 45.3 percent in 1997, when the number of local governments covered increased to 9. As a result, in 1997, the preliminary results of the survey were announced more than 50 days earlier, compared to the previous year (see table 2).

< Table 2 > Comparison of the time taken for releasing survey results

Reference year	Survey period	Date of release		Time taken[1)]	
		Preliminary	Final	Until preliminary release	Until final release
1994	April 1-30, 1995	Dec. 22, 1995	April 26, 1996	7 months 22 days	11months 26 days
1995	May 1-31, 1996	Dec. 23, 1996	April 30, 1997	6 months 23 days	11 months
1996	April 1-30, 1997	Oct. 30, 1997	Feb. 29, 1998	6 months	10 months
1997	April 1-25, 1998	Oct. 14, 1998	Dec. 29, 1998	5 months 19 days	7 months 29 days
1998[2)]	March 1-April 15, 1999	Sep.28, 1999	Dec. 27, 1999	5 months 13 days	8 months 12 days

Notes: [1)] The time from the date of survey completion to the date of result release.

[2)] The year when the Industrial Census was conducted.

8. Starting from the year 1998, the revised system has been applied to all of the 16 cities and provinces. (On July 15 1997, the 15 cities and provinces were reorganized into 16.) The efficiency of the new system was proven in 1999, when the result of the 1998 Industrial Census covering as many as 290,000 establishments was announced preliminarily in October and finally in December. This represents a considerable reduction of the time consumed for surveys: in comparison with 1995, 10 weeks for preliminary publication and 15 weeks for final publication.

9. In regard to statistics on unemployment rates, progress has also been made. Until 1997, survey workers of the local statistical offices of KNSO visited 30,000 households, filled out survey forms and electronically transferred the data to the headquarters. The headquarters checked the feasibility of the transferred data, analyzed them and released the findings at the end of the month. (For example, the unemployment rate of March was published at the end of April.) However, there arose an urgent need to compile unemployment statistics at an earlier date in late 1997, when the financial crisis led to a sharp rise in unemployment. In response, KNSO introduced the CAPI (Computer Assisted Personal Interview) system in October 1998, and this new system, after 6 months of the pilot stage, came to be adopted in full scale in April, 1999. As a result, the compilation of unemployment statistics is now completed around 2 weeks earlier, compared to 1997, and they are announced about 10 days earlier, around the 20th day of each month.

2. Accuracy

10. In order to identify the exact number of the establishments to be surveyed for the Mining and Manufacturing Survey, KNSO developed the Census on Basic Characteristics of Establishment, which includes all the establishments in this country. At earlier times, the list of the mining and manufacturing establishments to be surveyed was set up based on the list used in the previous year and the newly identified establishments by local statistical offices during the year. However, since 1994, the Census on Basic Characteristics of Establishment is conducted in February, and systematic comparison is made between the survey results and the group of mining and manufacturing establishments identified in the old way. This has substantially contributed to increasing the accuracy of mining and manufacturing statistics.

11. Furthermore, KNSO developed a sophisticated software program for filling out survey forms and distributed it to local governments. With this PC software program, even the people who have never filled out questionnaires before can easily do the job. The software rolls out the survey forms on the computer screen in the same format as the paper forms. The co-relation of all the data on the same page, is automatically checked so that if any errors are detected on a certain page the user cannot proceed on to the next page. In addition, this data entry software has an editing function, which automatically checks consistency among the data entered and shows errors, if any, on the computer screen. The errors detected in the editing process shall be corrected and updated by those who entered the data concerned.

12. Besides, KNSO uses the same software program to confirm that the data entered are correct, before putting the data to use. Other measures taken to ensure data accuracy, are to provide time-series data to local governments for more adequate 1st complex editing; to give technical assistance for data review; and to educate not only survey workers but also individual establishments to be surveyed.

13. Thanks to all the efforts mentioned above, the accuracy of mining and manufacturing statistics has been retained even when the time taken until the release date has been reduced.

14. In the meantime, the CAPI method has been used to compile data on unemployment rates, which has rendered the data more accurate and made multi-faceted analysis possible. That is to say, the old process involved writing down the information from respondents on the paper forms and entering it on the computer, and several types of errors took place in this process. However, the CAPI method does not admit of any of such errors. In addition, as unemployment statistics have come to cover more categories, such as unemployment rates based on the OECD standards and the figures of discouraged workers, they can be used for more diverse purposes.

< Table 3 > Differences between preliminary and final statistical results of the Mining and Manufacturing Surveys[1)]

(Unit : %)

Reference year	Number of establishments	Number of employees	Shipment	Value added
'94	0.00	0.10	0.38	0.64
'95	0.30	0.13	0.09	0.16
'96	0.62	0.14	-0.25	0.46
'97	-0.01	0.00	0.01	0.04
'98[2)]	0.02	0.00	-0.29	-0.33

Notes: [1)] ((Final - Preliminary) / Final -1) ×100

[2)] The figures include only the data on the establishments with 5 workers or more in the mining and manufacturing sector.

III. Future plan

15. As a short-term plan to promote the timeliness and accuracy of statistics currently compiled and published by KNSO, it is expected that the automated coding system for industries and occupations will be established by 2001. On top of that, the existing software programs for data entry and editing will be upgraded; the guidelines on the quality of statistical data and the quality appraisal system will be introduced ; and the application of the CAPI method will be expanded. The experience and know-how accumulated in the process of developing survey and data-processing methods for the Mining and Manufacturing Survey will serve as a useful reference and efforts will be made to explore new survey and data-processing skills tailored to unique characteristics of each set of statistics.

16. The mid- and long-term goal of KNSO is to realize 'paperless survey'. To this end, several innovations are under way. With the aim of more widespread Internet-based survey practices, 6 types of surveys will be conducted through e-mails in 2000. In addition, studies and researches are being made on the ways to resolve the issue of information security and, as a way of securing more precise data, the possibility of giving out the editing software program to every respondent is being considered.
