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ROLE OF MODEL SURVEYS - A REVIEW

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INTRODUCTION

The purpose of this paper is to review the role of the Voorburg Group model survey in the development of ABS surveys of the services sector. Specifically it:

- reviews the origins and countries' experiences of the model survey
- reviews the use of the model survey in the development and implementation of a service industries collection strategy in Australia
- in the light of that experience, attempts to assess the appropriateness of the various modules and the general model survey approach
- considers, from an Australian viewpoint, what the role of the model survey might be.

Origins of the Model Survey

2. The concept of a model survey was first put forward by Statistics Canada in a paper [1] prepared for the fourth meeting of the Voorburg Group held in Ottawa in 1989. The proposal of that paper was "that a group of interested countries would cooperate in producing a standard description of a survey of producers of computer services, the aim of which would be to obtain prices and quantities of CPC services sold domestically and abroad." It was further proposed that a paper on the concept of a model survey be presented in the name of the Voorburg Group to the 27th Session of the United Nations Statistical Commission.

3. At the fifth meeting of the Voorburg group in Paris in 1990, Statistics Canada presented a second paper [2] which was approved by the Voorburg Group, outlining the components of the model survey for computer services. The essential components (or modules) of the model survey were as follows:

Module 1	Revenue from the Sales of Goods and Services
Module 2	Goods and Services Used in the Operations
Module 3	Purchases of Goods and services for Resale
Module 4	Inventories
Module 5	Supplementary Question Concerning the Basis of Accounting
Module 6	Exports
Module 7	Imports
Module 8	Supplementary Questions regarding Packaged Software Products Revenues
Module 9	Employment Numbers
Module 10	Fixed Assets, Additions and Disposals
Module 11	Software Research and Development

4. In the introduction to the paper it was noted that the "modules are not meant to be used as a single collection vehicle since the target population is not the same for all modules and questions". Further, it flagged that "each statistical office participating in the survey will need to elaborate questionnaires and a collection strategy in line with its own survey practices and taking into account the response burden imposed on its

respondents" and "they may choose not to use all of the modules, nor for that matter, all the detailed questions provided in the first two modules".

5. The paper further noted that modules 1-6 formed the core of the 'survey' and were designed for businesses classified to ISIC 72 - computer and related activities. Modules 8-11, while relating to businesses classified to ISIC 72, were not considered part of the core due in part to the potential difficulties in collecting the data, while module 7 was intended for the collection of data relating to the imports of computer services by all sectors of the economy.

6. From this it would seem that the initial concept of the model survey was primarily as a data model, aimed at elaborating the items of information one would wish to know about computer services, both as an industry concept and as a commodity concept. While comprehensive in specifying the data items, the earlier papers do not appear to fully espouse the intended purpose of the model survey, other than to note that it would further the understanding and international comparability of statistics on the service sector, and "provide a means for countries to collect internationally comparable data and to test the Central Product Classification as applied to a particular service industry".

7. At subsequent meetings of the Voorburg Group, 'model' surveys have been developed and proposed for other services such as Audiovisual Services, Telecommunications, Insurance and Market Research and Advertising Services. In terms of modules, these have been similar to the Computer Services Model Survey, with the addition of industry specific modules where considered appropriate.

8. At the meeting of the Voorburg Group in Sydney in 1994, two sessions were held to discuss the possible additions to the modules of the model survey. The first considered a number of papers addressing the need for and possible means of enhancing the employment module, through the inclusion of educational qualifications as an element of the module. The second session considered a paper [3], which proposed the measurement of innovation as an addition to the model surveys of service industries. It was agreed that both proposals should be pursued.

Experiences with the Model Survey

9. Several countries have reported to the Voorburg Group on their experiences in adopting the model survey. These are summarised below:

Table 1: Reports on Experiences with the Model Survey

Year	Country	Industry Sector
1991	Canada	Computer Services
	France	Computer Services
	New Zealand	Computer Services
1992	Finland	Audio visual
	Australia	Computer Services
	Czechoslovakia	Computer Services
	Canada	Computer Services
	Finland	Computer Services
1994	Sweden	Selected Business Services
	Canada	Computer Services

10. In spite of the context set by the 1990 Canadian paper, much of the discussion in those reviews has focused on the model survey as a prescription for a data collection model for an industry collection. In doing so, the reviews have identified those areas where data (such as revenue) were readily available and flagged those areas where data items from the modules were not readily available (such as imports and exports). In contrast, the 1991 and subsequent Canadian papers, reporting their experiences with the model survey, have clearly viewed it as a data model, sourcing the data for each of the modules from a range of data collections. In doing so, they have provided commentary on the issue of the population frames used for the various surveys, which in turn is critical to the issue of data comparability between the modules.

11. As indicated above, there has now been considerable experience with the model survey, albeit limited to a few industries, and it would seem appropriate to review the role of the model survey in terms of its purpose and content.

The Australian Experience with Model Surveys

12. To understand the role of the model survey in the development and implementation of a service industries collection strategy in Australia, it is necessary to understand the overall economic statistics strategy adopted in Australia, and how the services industries program fits into that strategy.

13. The main feature of the overall economic statistics strategy is the development of an annual Economic Activity Survey (EAS) covering all sectors of the economy. The estimates from that survey are based on a sample from a common frame (the business register) of employing businesses, and are designed to produce reliable estimates at the ANZSIC (Australian and New Zealand equivalent of the ISIC) Division level, although estimates at the Subdivision level are also available. The survey collects fundamental structural economic data such as employment, income, expenses, assets and liabilities, and enables the derivation of profitability measures and industry gross product.

14. The EAS is intended to provide the core data set for the total 'market' economy and also provide a perspective on the size and performance of each ANZSIC Subdivision including the services sector in relation to the total 'market' economy. The EAS therefore is intended mainly to meet the needs of macro-economic users, including the requirements of the national accounts area.

15. Other elements of the strategy relevant to the service industries collection program and the role of model survey are:

. A survey of international trade in services which provides comprehensive measures of imports and exports of services;

. A survey of research and development which covers all known R & D performers.

16. Within this framework, the prime role of the service industry collections is to provide, for micro-economic analytical purposes, a

comprehensive picture of specific industries, in terms of their structure, economic performance and activities.

17. In attempting to meet that objective there have been three key elements of the development of the ABS service industry collections.

18. The first element has been the development of a program of individual service industry collections. The strategy and criteria adopted for the development of that program were the subject of a paper [4] presented at last year's Voorburg Meeting in Sydney.

19. The second element has been extensive investigations into the industry under study, to develop an understanding of it, and to create an appropriate population for the survey. In respect of the latter, while the ABS Business Register, which records all employing businesses, is the starting point in developing a population frame for such collections, extensive coverage checks are undertaken prior to the conduct of the survey to ensure that all units (including non employing units where considered appropriate) within the industry under study are included on the frame. Further, in some industries such as the legal and medical professions where there are complex legal structures, alternative frames have had to be established. An outcome of this process is that data from the individual service industries surveys may not be directly comparable with the broader estimates from the EAS.

20. The final element in the development of the service industry collections has been extensive user consultation, the determination of the data items to be collected and the assessment of data availability. It is in respect of the determination of the data items that the modules of the model survey have particular relevance, in that it is providing a broad framework in which to consider the data items that may meet the needs of users. The Australian experience with regard to the individual modules is described below.

Module 1: Revenue from the Sales of Goods and Services

21. Inevitably, a key requirement of users is information on income/revenue by commodity. To the extent that this module of the model survey has been developed based on countries' previous experiences (as was the case with computer services) the module, in conjunction with the CPC, has provided a useful starting point for determining what may be feasible for data collection. Nevertheless, in the Australian situation the final requirements are determined by user requirements and data availability.

Module 2: Goods and Services Used in the Operations

22. Not unexpectedly, this has been a key requirement of users. Again, the module provides a useful reference point, but the final specifications of data items are determined by user requirements and data availability. Further, in terms of reference points, the EAS data items are usually the starting point for the service industries collections, with a view to maintaining comparability with that data source.

Module 3: Purchases of Goods and Services for Resale

23. This item is included as a matter of course.

Module 4: Inventories

24. Where appropriate this item is included as a matter of course.

Module 5: Supplementary Question Concerning the Basis of Accounting

25. In Australian service industries collections respondents are asked to report on an accrual basis. However, if businesses account on another basis this is accepted. Within that context, module 5 has not been included in service industries collections, primarliy as there would be little that we could do with the data.

26. A larger issue in Australia, with respect to annual collections, is the extent of reporting on an 'off June' year basis. While businesses in Australia are requested to provide data for our financial year (July to June), many businesses with overseas links do not account on that basis, and report to the ABS on calendar year and other bases. For this reason ABS collects information on reporting periods and is investigating means of adjusting off June data to a financial year basis.

Module 6: Exports

27. While exports (particularly as they relate to total income) have been identified as an item of interest to some users, they have not been included in the service industries collections to date, for two reasons. First, as noted earlier, data on imports and exports of services are collected as part of the International Trade in Services Survey (ITIS). To the extent that the ITIS is a survey of all importers/exporters, and the units included are classified correctly to industry then the data should be relatable to data about the outputs of the service industry. If necessary it would be possible to link the data at the unit record. The other reason for the absence of exports from the service industries collection is the respondent burden issue. From past experience exports are a difficult data item to report; given that such data are already sought in the ITIS it is considered inappropriate to seek them again.

Module 7: Imports

28. There has been no user requirement for imports from a service industry collection, and so they are not collected there. In any event they are available from the ITIS.

Module 8: Supplementary Questions regarding Packaged Software Products Revenues

29. In the Australian experience that there has been no identified requirement for the supplementary questions specified in the Model Survey for Computer Services.

30. However, the Australian experience has been that for each individual service industry collection there is extensive demand for a range of supplementary questions, primarily about activities specific to the industry. The development and inclusion of these data items are an integral and key element of the Australian service industries collection strategy.

Module 9: Employment Numbers

31. This is a key requirement of users of the service industries collections. As for Modules 1 and 2, this module provides a useful starting point for considering user needs. The actual data items collected respond to user needs specific to the industry under study, and of course to data availability.

Module 10: Fixed Assets, Additions and Disposals

32. Users have generally expressed strong interest in assets and liabilities, particularly in relation to income and profitability. These items have been collected as part of the service industries collections, although not to the detail specified in the model survey for computer services.

Module 11: Software Research and Development

33. As there has not been any strong user demand for software research and development, it has not been included in the service industries collection. In any event, if there was demand for such data, it would be met from the Research and Development Survey referred to earlier. That survey covers all organisations undertaking R & D and is classified by industry, and so its data could be related to data from the service industries collections.

34. In addition to the above modules there have been, as noted earlier, proposals for extension of the employment module and for introduction of an innovation module. In relation to the former there has been general user interest in employment qualifications, but this has presented considerable data collection problems and has not been pursued in the Australian service industries program. Given the existence of an Innovation Survey, unless a strong user demand emerged for linking innovation activity at unit record level with the other data items collected in the service industries collections it is unlikely that innovation items would be included in such collections.

35. As can be seen from the above, the role of the model survey in the development of the Australian service industries collections has not been strong to date. While many of the data items specified in the modules are included in the service industries collections, the only area where the model survey can be said to have provided any significant input to the development of the service industries collections has been Module 1. Its potential for influencing our practice has rested on the fact that it is based to a fair degree on other countries' experiences, so that Australia has been able to draw on such experience. At the other extreme, Module 5 - Supplementary questions concerning the basis of accounting and Module 7

- Imports have had virtually no relevance for the development of the Australian service industries collections.

36. Finally in considering the Australian experience, it is worth noting that the current strategy could provide data for most of the modules of the existing model survey. The contents of modules 1, 2, 3, 8, 9 and 10 are generally met directly from the individual service industry collections. Those of modules 6 and 7 are met from the international trade in services collections, which are capable of producing estimates at the 4 digit industry level, though from a sample survey of known exporters/importers and hence subject in some cases to potentially high sampling error . The content of module 11 can be met from the R & D Survey, which involves a complete enumeration of all R & D performers, and can provide estimates at the 4 digit industry level. As noted earlier, modules 4 and 5 have not been pursued.

The Model Survey - An Alternative Approach

37. As noted at the outset, the initial concept of the model survey would appear primarily to have been as a data model, aimed at elaborating the items of information one would wish to know about computer services, both as an industry concept and as a commodity concept. In this role the model provides a comprehensive summary of the data items of potential interest.

38. Nevertheless, as indicated above, the model survey has had relatively little impact on the development of Australia's service industries collections. It could be argued that the model survey, and its component modules, may be of more value if they were more focused on certain specific aims.

39. From an Australian viewpoint the real benefits of a model survey concept would accrue if it provided:

a) a general framework for the development of service industries data collections

b) a framework for reporting on countries' experiences with the development and conduct of service industries collections

c) a dynamic model which evolved based on the experiences of countries.

d) a basis for international comparisons of service industries data

40. In regard to (a), such an approach would change the focus of the model survey from that of a data model to a data collection model. The overall objective of such a model would be to provide guidance to countries in the development of service industry collections. In that context, it could be expected that some of the existing modules of the model survey may become redundant as the data (eg. module 7 - Imports) would not be relevant in the industry context. Alternatively, the data may already be collected in other collections undertaken by the statistical agency (and for response burden reasons would not be repeated), as is frequently the case with imports and exports of services and research and development data. Such modules could be considered optional; whether agencies collected such data (where they are already collected in another survey) would depend on user

needs in terms of relatability between the data item of interest and other data items of the model eg whether it is at the aggregate level or the unit record level.

41. It also may be considered desirable, in developing a model survey, to provide modules relating to other elements of survey design such as statistical units and population frameworks. Such modules would not be intended to be prescriptive, but rather to raise the issues involved in considering such matters.

42. In relation to element (b) above, ie providing a framework for reporting on countries' experiences with the development and conduct of service industries collections, clearly if member countries are to learn from one another a common framework, in which their experiences with service industries collections can be reported, is highly desirable. A key aspect to be catered for in such a framework would be to address countries experiences with the CPC, which should be an objective of the model. It is also within this context that expansion of the model to cover elements such as statistical units and population frameworks could yield significant benefits to member countries, as there are likely to be problems and issues specific to particular industries which are common to most countries.

43. Ideally, as indicated in (c) above, the model should be capable of evolving to reflect countries experiences. This is particularly the case with items of revenue, where the starting point would usually be the CPC; given that many elements of the CPC have not been tested it could be expected that the items of revenue in the model may change as experience is gathered.

44. Finally, as suggested in (d), an objective of the model clearly should be to provide a basis for comparison of statistical data for services industries and activities across countries.

SUMMARY

45. The purpose of this paper has been to review the role of the model survey in the development of the Australian service industries collections. Given the 'data model' orientation of the existing model survey its direct relevance to the Australian program of service industries collections has not been strong.

46. To enhance the future role of the model survey it is suggested that its focus should be redirected towards a data collection model, which not only would specify a minimum dataset (and a range of optional datasets) to be collected as part of service industries collections, but could also provide a framework for reporting on other survey design issues such as statistical units and population frameworks.

ISSUES FOR DISCUSSION

47. Possible issues for discussion include the following:

. How have other countries used the model survey?

. To what extent have they found the model survey of use in developing service industries collections?

. If the model survey were to be used as a data collection model, what additions or amendments to existing modules might be considered desirable?

1. Statistics Canada, Canadian Proposal for a Paper to be Presented in the Name of the Voorburg Group to the 27th Session of United Nations Statistical Commission, Papers and Final Report of the Voorburg Group Meeting, Ottawa, Canada 1989

2. Statistics Canada, A Model Survey for Computer Services, Papers and Final Report of the Voorburg Group Meeting, Paris, France 1990

3. F. D. Gault and W. Pattinson, Model Surveys of Service Industries: The Need to Measure Innovation, Papers and Final Report of the Voorburg Group Meeting, Sydney, Australia 1994

4. G. Sarossy, R. Rogers and W. Pattinson, A Strategy for Provision of Statistics on Services, Papers and Final Report of the Voorburg Group Meeting, Sydney, Australia 1994 ,