

STACKING UP THE COURSE! AN EVALUATION OF THE STATISTICS IN ACTION COURSE IN SOUTH AFRICA

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Statistics in Action (STAC) is a course designed to explain the processes involved in a survey. The course was designed by Statistics Sweden (SCB) for their internal staff. SCB has bilateral agreements with Statistics South Africa (Stats SA) and one of the initiatives of this partnership is the STAC course. Seven STAC courses were presented at Stats SA during the period 1997 to 2001. On each occasion two consultants from SCB presented the course. In 1998 and 2001 facilitators from Stats SA co-presented the course. The size of the groups ranged from 15-20 participants. Since its inception in South Africa a total of 115 employees from Stats SA and two each from the Department of Justice and the Department of Labour were trained. This paper attempts to establish the usefulness of the course and to determine if it has enhanced the participants' knowledge of the survey process. Should the course be continued at Stats SA? Can the course serve as an instrument to address statistical literacy within the National Statistics System (NSS)?

1. WHAT IS STAC?

STAC is a course designed to explain practically the processes involved in a survey. The course was developed by Statistics Sweden for their internal staff and has been presented there since the seventies. The course has also been presented in Zimbabwe and the Baltic States. In South Africa the course has been presented at Statistics South Africa (Stats SA) since 1997. In total seven courses were presented. It is strongly recommended that the class size range from 16-20 participants to facilitate small group work and discussions. At Stats SA on average there were 17 participants. The content of the course includes the following:

- How to convert a general problem into a statistical problem
- Identification of the target population, frame construction/selection and sample selection
- Identification of study variables
- Development of a tabulation plan
- Decision on the method of measurement
- Design of the measurement instrument (questionnaire)
- Data collection
- Data coding
- Data entry and editing
- Data Analysis
- Report writing

2. WHY THE NEED FOR STAC?

Stats SA leads in the creation of a National Statistics System (NSS). One of the dimensions of a NSS is statistical production, which encompasses the setting of quality standards. As mentioned in Winquist (1991) there is a tendency for staff within a statistical agency to be specialised in their specific area without being knowledgeable about other phases of a survey and how the phases are linked to each other. The quality of each phase of a survey is dependant on the next and this impacts on the quality of end products. The STAC course clearly illustrates all phases of the survey process and their inter-dependence. Survey staff at Stats SA work in isolation and there is often a lack of communication between the people working on the different phases of a survey. It is vital for staff engaged in survey work to be conscious of the survey process as a collective unit. It is only after attending the course that the full impact of this concept is appreciated. The core function of Stats SA is data collection using surveys. Survey staff are not always knowledgeable about the sound theoretical practices involved in the survey process. STAC successfully fulfils this gap.

3. HOW IS THE COURSE PRESENTED?

The course is presented in three parts of two weeks each. Part One concentrates on the planning phases of a survey while Part Three deals with data analysis and report writing. Parts one and three are presented by visiting Swedish consultants who have extensive experience of the various aspects of sample surveys coupled with teaching experience. In the last two courses a local trainer coordinated the course in addition to overseeing part two, which entails data collection. On two occasions 1999 and 2001 local trainers co-presented the course. It is envisaged that the presentation of the course will eventually be taken over by Stats SA trainers.

As mentioned by Joiner et al (1994) STAC is "learning by doing." The course comprises short lectures where the theoretical background of the different phases of a survey is presented, along with small group discussions and practical exercises. A small-scale survey is conducted to investigate the problem of the study. Participants are placed into small groups and requested initially to identify key study areas. Once this has been established groups are then asked to formulate questions, which will eventually be used in the questionnaire. Various tabulations, which will be built into the tabulation plan, are then worked on. Charts, tables and text are produced by the various groups, which will eventually constitute the report. Proposed solutions to allocated tasks are debated with the entire group. If the group does not reach consensus, final decisions are taken by a majority vote. Each participant conducts at most 25 personal interviews and captures the data collected himself. In addition all tables and charts in the report are generated by participants using Excel

Topic selection is important. It has a dual purpose in that the topic has to be real for the course to be interesting and the findings have to be useful to the client. Of the seven topics dealt with at Stats SA only two topics originated from clients outside of Stats SA. The reason for selecting mainly Stats SA clients is to avoid problems that may arise, e.g. with finding a suitable frame, time and financial constraints. As mentioned by Winquist (1991) the population of the survey must be geographically concentrated since the time for data collection is limited. For this reason, most of the populations of the surveys have been restricted to Stats SA employees at the head office. Topics covered at Stats SA include the following: Communication Within Stats SA, Preventative Measures Against Aids, Road Traffic Safety, Public Health Service, Follow Up On Aids Awareness Campaign, Code Of Conduct at Stats SA and Relocation of Stats SA. The findings of the survey are presented in a report, which is handed over to the client on the last day of the course. Participants also do a short presentation of the main finding of the survey to the client before handing over the report.

4. WHAT HAPPENED AT STATS SA?

A total of 119 persons have attended the course, 115 from Stats SA and two each from the Department of Labour and the Department of Justice. It was found during presentation of the course that the educational level of the participants impacted on the level of active participation and the level and amount of theory that was included in the course. As suggested by Winquist (1991) it is advantageous if participants have practical experience in producing statistics, e.g. are survey statisticians, field supervisors or programmers. At Stats SA, the participants of the course were mostly fieldwork officers, survey statisticians and survey clerks. Moreover, at Stats SA, it was found that a healthy mix of participants gave participants an insight into the functioning of all sections of the organization. This information interchange is lost when all participants come from the same section. Interesting to note is that selecting individuals from one-section resulted in participants being self conscious and reluctant to express themselves for fear of embarrassment.

It is debatable as to when in the participant's lifetime at the organization that the person should attend the course. Should participants attend as soon as they enter the organization or should they be in the organization for at least a year? Some managers are of the opinion that new appointees should attend the course in their first month of employment. The reason here is that the course would equip them with how the organization functions. This has its merits. However the STAC course provides a platform for participants to share and gain knowledge from one another about the different activities of the organisation, e.g. what frames are used for sample selection by the different sections, the different methods of data collection, the different measurement instruments used in different surveys, etc. New appointees rarely know where they fit within their

own section let alone being au fait with their own specific tasks. They should be given more time to acquaint themselves with their tasks before they can make a valuable contribution to the STAC course.

Another issue worth pursuing is whether the course should be part of induction programmes set up for specific professionals. In this way, the course would be made compulsory for e.g. survey statisticians, economists and demographers. STAC is considered as an entry-level course. Therefore a common misconception amongst Stats SA employees with postgraduate qualifications in Statistics is that the STAC course will not teach them anything new. This may be true with respect to theoretical knowledge. However, those who have ventured on the course were pleasantly surprised at how well the theoretical knowledge was applied in practice. This is not taught at South African universities. At Stats SA the course is presented at the Head Office in Pretoria. This results in participants being called away from classes to attend to "urgent matters", creating disruption not only for the individual, who then has to make up for lost time but also for the entire group. A simple solution would be to conduct the course in an outside venue.

5. STUDY AMONGST STATS SA PARTICIPANTS

A study was conducted on STAC participants from 1997 to 2001. Electronic questionnaires were sent out to 78 of the 119 attendees. A total of 52 participants responded, with the majority being "field work" officers. Amongst the respondents 69% had post matric qualifications; 35% were clerks/semi-professionals, 38% were professionals and 10% were managers, 17% did not answer the question. Statistical knowledge ranged from no prior statistical knowledge to postgraduate level.

In the same study it was found that 50% agreed that the course helped them understand the different phases of the survey process. A further 98% of respondents recommended that the course be continued. When asked why the course should be continued, responses varied from the course was practical, useful, easy to follow, requires no statistical background, and provides basic statistical knowledge. A majority of participants were of the opinion that the course enhanced their knowledge of the entire survey process and 27% found it useful to Stats SA employees in terms of understanding the functions of the organization. Nine out of ten respondents found the course relevant to their specific duties. Respondents were asked if they would be interested in an advanced STAC course and what should be included in the course. Nine out of ten were interested in attending an advanced course and 57% emphasised the need to concentrate on the use of statistical methods in data analysis. From course evaluations available in the reports compiled on all 7 STAC courses participants were asked what should be done to improve the course. A majority said that more time should be allocated to the course otherwise participants felt the "course was just fine." No changes to the course content or the presentation style were found necessary. The physical setting was a cause for concern in every course presented.

6. THE FUTURE OF STAC AT STATS SA

At the end of the course participants are presented with a certificate to acknowledge their attendance of the course. Employees at Stats SA are extremely conscious of the value and accreditation of courses they attend. With this in mind measures are in progress to get the STAC course accredited by SAQA. In response to the findings of the study an advanced STAC course is in the pipeline. The course will concentrate on the construction of a tabulation plan, data coding, editing, analysis and report writing. Participants will be exposed to extensive use of software packages such as Excel and SAS to create tables and graphs.

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