ETHIOPIA
Strategy Support Program

ETHIOPIAN DEVELOPMENT RESEARCH INSTITUTE
EDRI

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
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The impact of Computable General Equilibrium (CGE) training

Summary

A CGE model describes a steady-state economy where supply is balanced with demand. It considers all existing economic variables and the impact of any changes, and in particular changes in policy reform. A CGE has become a standard tool for economic analysis. For this reason, ESSP in association with EDRI, put effort into achieving a training goal to build capacity in CGE modeling, coupled with disseminating knowledge on this increasingly used technology in government, non-government agencies and academia. People from these institutions comprised the target audience for this training and subsequent training survey, which followed more than 6 months after ESSP's training.

The CGE training emphasized the practical element using Ethiopian data, and encouraged learning largely through projects and group assignments. The survey reports that nearly half of the participants incorporated these practical materials into other courses and delivered these to a further 186 students. For 60% of participants, this was their first CGE training. Most of the participants applied their new skills on completion of the course, and their motivation to develop their modeling skills further increased significantly. However, the survey highlighted the importance of continuous practice in order to build and maintain confidence and competence at using CGEs. Future consideration is therefore required to provide other opportunities for learning consolidation at an individual and organizational level.

Training objectives

- To use basic CGE tools and the static model version
- To work with the CGE dynamic model using various methodologies, such as EDRI SAM (Social Accounting Matrix)

Participants

In week-long training programs on CGE modelling during October 2011, 123 participants engaged in training. The majority studied the static model and 35 continued to develop advanced skills using the dynamic model a week later. Participants included:

- Lecturers of economics at universities
- Post-graduate research students who use CGE modeling in their theses
- Researchers in government ministries

70% of participants were from 15 universities, others from government organizations, such as: National Bank of Ethiopia, Ministry of Finance and Economic Development, CSA and EDRI.

Sampling

Careful attention was paid to identify participants who: a) would benefit most from CGE modeling training b) had the necessary prerequisites c) would disseminate knowledge. From this group, a sample of 30 participants was selected as shown in Table 1.

Table 1: Sample size and constitution

Organizations	Male respondents	Female respondents	Total respondents
Universities	17	4	21
Research institutes	5	1	6
Others	3	0	3
TOTAL	**25**	**5**	**30**

Data was collected through telephone interviews to assess:

1. Relevance and quality of training
2. Individual and organizational impact
3. Ongoing application and knowledge sharing (spillovers)

Survey results

1. Relevance and quality of training

The questions and responses to the questionnaire are described Table 2. For each question, participants were asked to rank (**Strongly disagree** to **Strongly agree**) each aspect of the training as well as the computer skills needed for the course.

Table 2: Relevance and quality of training (%)

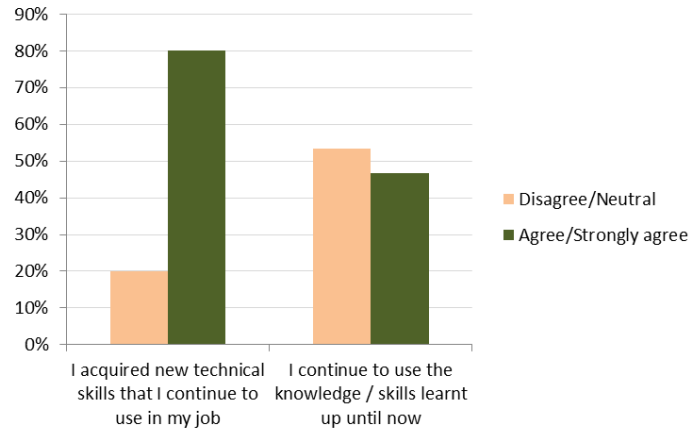
Questions	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Relevance of the topic covered	0	13	10	50	27
Adequacy of the material provided	0	3	7	43	47
Knowledge of the trainers	0	7	0	13	80
I received the necessary assistance	0	3	7	33	57
Easiness of the manual to follow	0	10	27	47	17
Ability to use computer skills	0	3	17	50	30
Need for additional computer training before the course	7	20	30	20	23

The participants rated the lecturers highly for their knowledge and their delivery skills. During the practical sessions, participants felt that they received adequate assistance. The survey considered prerequisite computer skills to embark on this training and found 80% of participants had the necessary skills. Nevertheless, 43% agreed that prerequisite courses in computer skills would have been useful.

2. Individual and organizational impact

From a personal perspective, participants responded positively to the impact of the training (80%), reporting that their technical skills had developed and that they used these newly acquired skills in their jobs, as illustrated in Figure 1:

Figure 1: Individual impact of the training



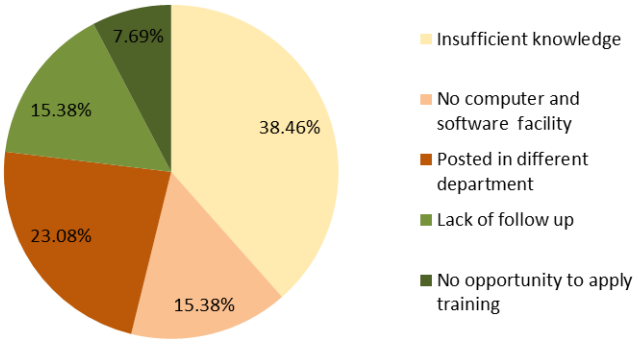
Although the single training event provided new skills to all participants, the survey results suggested that only continuous revision and application of CGE modeling would improve skills significantly. Nevertheless, the inspiration and motivation to learn more from such training was clearly expressed with 80% participants seeking further training.

From an organizational perspective, 27% of participants felt that the training had no impact. This was surprising. A possible explanation is that CGE is rarely used as a method of analysis in universities and research centers where 70% of participants worked. Government ministries engaged with budget allocations, planning and scenario simulations, make more use of CGE modeling, therefore, in future these people should be targeted.

Constraints

Even though the most of the trainees (73%) applied the skills learnt from the CGE training, the survey identified difficulties faced by participants who failed to apply CGE modeling skills as shown in Figure 2.

Figure 2: Reasons for not applying skills learned in the CGE course



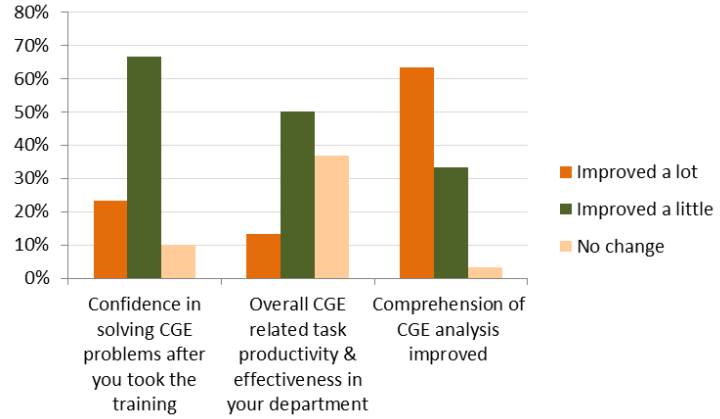
This further confirmed that a single training event is not sufficient to competently carry out CGE tasks for many participants.

3. Ongoing application and knowledge sharing

The full effect of training can be seen through the on-going use of training materials and their adoption in other courses within university departments or organizations in order to train others. 43% of the survey participants incorporated the course materials to train a total of 186 students, although a far great number will have indirectly benefited by extrapolating our representative sample.

The survey sought to evaluate the level of improvement the participants demonstrated as a result of the training. This was assessed using 3 parameters as shown in Figure 3.

Figure 3: Training materials used in other courses



Conclusion

ESSP's training targeted researchers and graduate students with a keen interest in CGE modeling. The training was relevant to the individuals and was of good quality which made it worthwhile on a personal level, and instilled new skills. However, on further investigation, this training survey discovered that the effect on the organization was less than expected. Many of the respondents revealed that their organization had not significantly changed as a result of the training, a fact probably due to the rare use of CGE modeling at their institutes and perhaps government workers should be targeted in future.

Nevertheless, the indirect benefits from distributed material or the directly trained and highly motivated lecturers teaching other students (186 in total from the 30 respondents) was confirmed in the survey.

A significant limitation observed in the results showed how few respondents received follow-up training or mentoring. This assessment concludes that this single training event was not enough to equip all participants with the necessary CGE skills to use modeling competently. Regardless of this, the training went a long way to develop greater awareness of CGEs as well as to build capacity in CGE economic modeling that will increasingly become an important economic analysis tool.

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